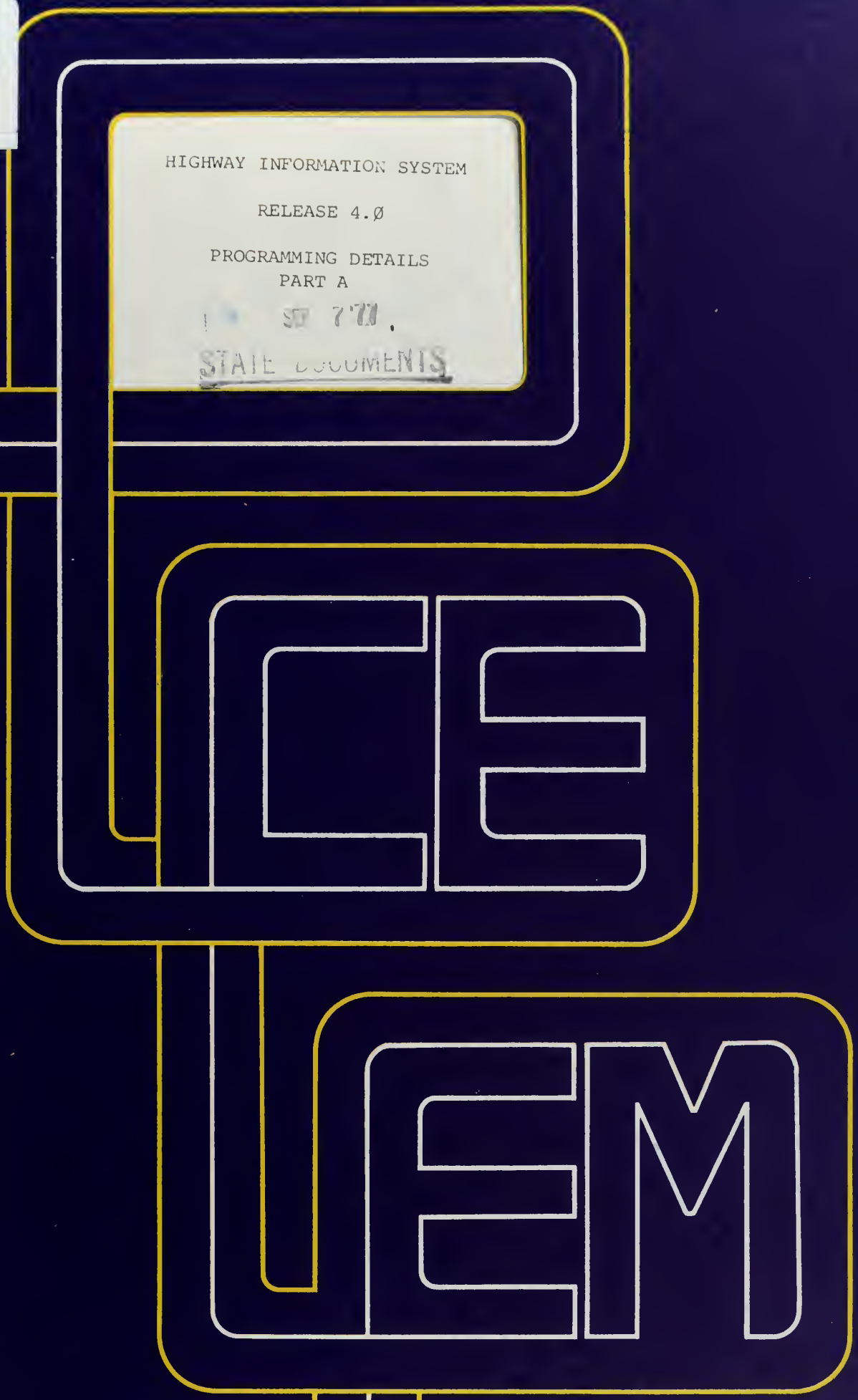
HIGHWAY INFORMATION SYSTEM

RELEASE 4.Ø

PROGRAMMING DETAILS
PART A



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HIGHWAY INFORMATION SYSTEM

RELEASE 4.Ø

PROGRAMMING DETAILS
PART A

Prepared for the:

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
PLANNING AND RESEARCH BUREAU

In cooperation with the:

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

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FOREWORD

This report is a portion of the documentation of Release 4.Ø of the Highway Information System undertaken by the Department of Civil Engineering and Engineering Mechanics, Montana State University. The retrieval system has been evolving over the last several years under the sponsorship of the Planning and Research Bureau of the Montana Department of Highways with some assistance from the Highway Traffic Safety Division, Montana Department of Community Affairs.

Release 4.Ø of the Highway Information System is documented in the following volumes:

Highway Information System Release 4.Ø: System Overview

Provides an introduction to the Highway Information System.

Highway Information System Release 4.Ø: Index

Provides an index to all manuals except the System Overview and Program Listings.

Highway Information System Release 4.Ø: User's Manual

Describes how to use the Highway Information System for retrieving information and for printing reports and summaries.

Highway Information System Release 4.Ø: Data Coding Manual

Describes the data card formats for entering data into the Highway Information System files.

Highway Information System Release 4.Ø: System Maintenance Manual

Provides information for performing scheduled system backups and file reorganizations and for allocating system files.

Highway Information System Release 4.Ø: Record Formats & Subroutines

Describes the internal record formats of the various files and provides calling sequences to subroutines. This manual is intended for persons writing new programs to add to the Highway Information System.

Highway Information System Release 4.Ø: Programming Details

Describes the existing programs and provides a guide to the program listings. This manual is intended for persons maintaining existing software in the Highway Information System.

Highway Information System Release 4.Ø: Program Listings

Contains computer-generated listings of all source programs of the Highway Information System.

Although the project was conceived, initiated, and primarily funded through the Planning and Research Bureau of the Montana Department of Highways, the development cost of selected portions of the system was borne by the Highway Traffic Safety Division of the Montana Department of Community Affairs.

In developing the system, the CE & EM Department has had the privilege of using an IBM OS/VS1 37Ø/145 computer located at the Data Processing Bureau of the Montana Department of Highways in Helena. PL/I has been used for most of the programs because of its versatility and ease of use. BAL (assembler) has been used for most input-output modules and for other modules that require its increased capabilities and efficiency over PL/I.

The project could never have progressed to its current state without the continued and patient encouragement and assistance from the Planning and Research Bureau and the Data Processing Bureau of the Montana Department of Highways, and from the Highway Traffic Safety Division of the Department of Community Affairs.

The project conclusion was also hastened by the significant effort of other project personnel: Scott H. Danforth, R. Helene Knowlton, and Doug M. Geiger.

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CHAPTER 1

INTRODUCTION

This manual is intended for use by persons involved in maintaining the programs of the Highway Information System. The following publications are also needed:

Highway Information System Release 4.Ø - User's Manual
Highway Information System Release 4.Ø - Record Formats and Subroutines
Highway Information System Release 4.Ø - Program Listings

The following publications are needed for some applications:

Highway Information System Release 4.Ø - Data Coding
Highway Information System Release 4.Ø - System Maintenance

How To Use This Manual

The programs of the Highway Information System have been designed to be as self-documenting as possible. This has been accomplished primarily by the following means:

1. "Smooth" logic that follows some of the principles of structured programming and some of the principles of composite design.
2. Modular design that reduces the size of most of the programs in the system.
3. Programs designed for easy readability.
4. Use of comments as needed to enhance the above techniques.

Structured programming has not been adopted completely because it is felt that GOTO statements have advantages that should not be eliminated. However, the use of GOTO statements has been cut down to approach the structured programming concepts of simple design and program maintenance.

Because of the self-documentation approach, the program listings provide the best documentation of the system. Detailed flow charts and flow tables are not provided for individual programs. Instead, the documentation is geared toward aiding maintenance personnel quickly locate which module is needed in order to make a system change.

Each user program (such as the FORM-16 program of the accident subsystem) is described in a separate section in this manual. Suppose that a programming change is needed in the FORM-16 program. Locate the section that deals with the FORM-16 program by checking either the table of contents or the system index. In this section is a brief description of each source module and load module of the FORM-16 program. Information provided for the load module includes:

1. Name of the load module.
2. Name of the entry point.
3. A list of all source modules included in the load module.
4. An indication of which modules can be included by automatic call when link-editing.

Information provided for each source module includes:

1. Name of the source module.
2. Language in which the source module is written.
3. A complete list of all external references other than to IBM routines.
4. In some cases, a brief description of the functions performed by the module or a brief description of the internal logic.

Each subroutine is also described in this manual. As with user programs, all of the source modules and load modules associated with the subroutine are described.

Appendix A provides a complete list of source, object, and load module names in the system.

Appendix B provides a summary of the various load modules that are stored in the HIS.REL4PTØ library, including entry point names and a list of source modules in each load module. This information is gathered from a computer file built using information from the load module documentation of this manual.

Appendix C provides a cross-reference listing of the system's source modules. This computer-generated listing is generated from the file printed in Appendix B. For each source module is listed all of the load modules in which that source module is found. This listing should be referred to whenever any source module is modified to determine which load modules need to be re-linked.

CHAPTER 2

ACCIDENT SUBSYSTEM

The accident subsystem is also known as the HIS33 subsystem. The names of accident source modules and load modules have the format HIS33xxx, where "xxx" is a 3-digit number.

This chapter describes each of the source modules and load modules of the accident subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Program usage and subroutine linkages are described in other HIS release 4.Ø publications.

The DACRDQ Subroutine

Source Module	Language	Function
HIS33ØØØ	Assembler	DACRDQ subroutine
HIS33ØØ1	Assembler	DACRDQ interface

Load Module	Library	Function
DACRDQ	HIS.SUBRTN4	DACRDQ interface

The HIS33ØØØ Source Module - This module is the DACRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS33ØØ1 Source Module - This module is the DACRDQ interface. It is linked with programs that call DACRDQ. When called, it loads DACRDQ into storage and passes control to it. It contains the following external reference:

FETCH - FETCH subroutine

The DACRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of DACRDQ by automatic call. It consists of the HIS33ØØ1 source module.

The DACRDB Subroutine

Source Module	Language	Function
HIS33ØØ2	Assembler	DACRDB subroutine
HIS33ØØ3	Assembler	DACRDB interface

Load Module	Library	Function
DACRDB	HIS.SUBRTN4	DACRDB interface

The HIS33ØØ2 Source Module - This module is the DACRDB subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS33ØØ3 Source Module - This module is the DACRDB interface. It is linked with programs that call DACRDB. When called, it loads DACRDB into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The DACRDB Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of DACRDB by automatic call. It consists of the HIS33ØØ3 source module.

The VACRDQ Subroutine

Source Module	Language	Function
HIS33Ø1Ø	Assembler	VACRDQ subroutine
HIS33Ø11	Assembler	VACRDQ interface

Load Module	Library	Function
VACRDQ	HIS.SUBRTN4	VACRDQ interface

The HIS33Ø1Ø Source Module - This module is the VACRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS33Ø11 Source Module - This module is the VACRDQ interface. It is linked with programs that call VACRDQ. When called, it loads VACRDQ into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The VACRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of VACRDQ by automatic call. It consists of the HIS33Ø11 source module.

The VACRDA Subroutine

Source Module	Language	Function
HIS33Ø12	Assembler	VACRDA subroutine
HIS33Ø13	Assembler	VACRDA interface

Load Module	Library	Function
VACRDA	HIS.SUBRTN4	VACRDA interface

The HIS33Ø12 Source Module - This module is the VACRDA subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

VACRDQ,VACRDQF,VACRDQR,VACRDQX,VACRDQC - VACRDQ subroutine

The HIS33Ø13 Source Module - This module is the VACRDA interface. It is linked with programs that call VACRDA. When called, it loads VACRDA into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The VACRDA Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of VACRDA by automatic call. It consists of the HIS33Ø13 source module.

The ACDRDQ Subroutine

Source Module	Language	Function
HIS33Ø2Ø	Assembler	ACDRDQ subroutine
HIS33Ø21	Assembler	ACDRDQ interface

Load Module	Library	Function
ACDRDQ	HIS.SUBRTN4	ACDRDQ interface

The HIS33Ø2Ø Source Module - This module is the ACDRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS33Ø21 Source Module - This module is the ACDRDQ interface. It is linked with programs that call ACDRDQ. When called, it loads ACDRDQ into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The ACDRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of ACDRDQ by automatic call. It consists of the HIS33Ø21 source module.

The ACDWRQ Subroutine

Source Module	Language	Function
HIS33Ø22	Assembler	ACDWRQ subroutine

The HIS33Ø22 Source Module - This module is the ACDWRQ subroutine. It contains no external references.

The ACCFILE Address List

Source Module	Language	Function
HIS33Ø8Ø	Assembler	ACCFILE address list

Load Module	Entry Point	Library	Access Name	Function
HIS33Ø8Ø	ACCFILE	HIS.REL4PTØ	ACCFILE	Accident dynamic subroutines

The HIS33Ø8Ø Source Module - This source module contains a list of addresses of the address lists of the accident dynamic subroutines, allowing all of the dynamic subroutines to be stored in a single load module. External references include DACRDQE, DACRDBE, VACRDQE, VACRDAE, and ACDRDQE.

The HIS33Ø8Ø Load Module - This load module contains the accident dynamic subroutines (with the exception of ACCRD). The entry point of the load module is the ACCFILE address list. The load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS33ØØØ	DACRDQ subroutine
HIS33ØØ2	DACRDB subroutine
HIS33Ø1Ø	VACRDQ subroutine
HIS33Ø12	VACRDA subroutine
HIS33Ø2Ø	ACDRDQ subroutine
HIS33Ø8Ø	ACCFILE address list

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The ACCRD Subroutine

Source Module	Language	Function
HIS33Ø9Ø	Assembler	ACCRD subroutine
HIS33Ø91	Assembler	ACCRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS33Ø9Ø	ACCRDE	HIS.REL4PTØ	ACCRD	ACCRD subroutine
ACCRD	--	HIS.SUBRTN4	---	ACCRD interface

The HIS33Ø9Ø Source Module - This source module is the ACCRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

SETINST - PRINT subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

CVTLOCN - CVTLOCN subroutine

DACRDQ,DACRDQF,DACRDQR,DACRDQC - DACRDQ subroutine

DACRDB,DACRDBF,DACRDBC - DACRDB subroutine

VACRDA,VACRDAI,VACRDAR,VACRDAS,VACRDAC - VACRDA subroutine

ACDRDQ,ACDRDQF,ACDRDQR,ACDRDQC - ACDRDQ subroutine

The HIS33Ø91 Source Module - This module is the ACCRD interface. It is linked with programs that call ACCRD. When called, it loads ACCRD into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The HIS33Ø9Ø Load Module - This load module contains the dynamic ACCRD subroutine. It contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø4	CVTLOCN subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS33ØØ1	DACRDQ interface
* HIS33ØØ3	DACRDB interface
* HIS33Ø13	VACRDA interface
* HIS33Ø21	ACDRDQ interface
HIS33Ø9Ø	ACCRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The ACCRD Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of ACCRD by automatic call. It consists of the HIS33Ø91 source module.

The CVTACC Subroutine

Source Module	Language	Function
HIS33715	Assembler	CVTACC subroutine

Load Module	Library	Function
CVTACC	HIS.SUBRTN4	CVTACC subroutine

The HIS33715 Source Module - This module is the CVTACC subroutine. It contains no external references.

The CVTACC Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of CVTACC by automatic call. It consists of the HIS33715 source module.

The SUM-BY-DAY-&-TIME Program

Source Module	Language	Function
HIS332ØØ	PL/I	SUM-BY-DAY-&-TIME mainline

Load Module	Entry Point	Library	Function
HIS332ØØ	PLISTART	HIS.REL4PTØ	SUM-BY-DAY-&-TIME

The HIS332ØØ Source Module - This module is the mainline program of SUM-BY-DAY-&-TIME. It contains the following external references:

PRINTER,PRINT,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine

ACCRD,ACCRDF,ACCRDO,ACCRDC - ACCRD subroutine

GETDAY - GETDAY subroutine

The HIS332ØØ Load Module - The SUM-BY-DAY-&-TIME load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS33Ø91	ACCRD interface
HIS332ØØ	SUM-BY-DAY-&-TIME mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUM-BY-CONTR-CIRC Program

Source Module	Language	Function
HIS332Ø1	PL/I	SUM-BY-CONTR-CIRC mainline

Load Module	Entry Point	Library	Function
HIS332Ø1	PLISTART	HIS.REL4PTØ	SUM-BY-CONTR-CIRC

The HIS332Ø1 Source Module - This module is the mainline program of SUM-BY-CONTR-CIRC. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine

ACCRD,ACCRDF,ACCRDO,ACCRDC - ACCRD subroutine

The HIS332Ø1 Load Module - The SUM-BY-CONTR-CIRC load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS33Ø91	ACCRD interface
HIS332Ø1	SUM-BY-CONTR-CIRC mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The FORM-16 Program

Source Module	Language	Function
HIS332Ø2	PL/I	FORM-16 mainline
HIS332Ø3	PL/I	FORM16A subroutine
HIS332Ø4	PL/I	FORM16B subroutine

Load Module	Entry Point	Library	Function
HIS332Ø2	PLISTART	HIS.REL4PTØ	FORM-16

The HIS332Ø2 Source Module - This module is the mainline program of FORM-16. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine
FORM16A - FORM16A subroutine
FORM16B - FORM16B subroutine

The HIS332Ø3 Source Module - This module is the FORM16A subroutine. It reads the accident files and performs calculations for the summaries. Values are totaled into arrays provided by the mainline program. Two parameters are passed to FORM16A: a binary fixed (15) variable and an array of fixed(5) variables with bounds (1:2Ø16). FORM16A returns a code in the binary variable that indicates the type of location parameters specified on the command:

Ø	Invalid parameter
1	No parameter
2	LOCATION=STATEWIDE
3	CITY parameter
4	COUNTY parameter
5	LOCATION=EVERYTHING

The array is used for storing values to be printed in the summary. The module contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
ACCRD,ACCRDF,ACCRDO,ACCRDC - ACCRD subroutine
INCITY - INCITY subroutine

The HIS332Ø4 Source Module - This module is the FORM16B subroutine. It prints the FORM-16 summary using values calculated by FORM16A. The two parameters returned by FORM16A are passed to FORM16B by the mainline program. FORM16B contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETHDGS,SETINST,DUMP - PRINT subroutine

The HIS332Ø2 Load Module - The FORM-16 load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS33Ø91	ACCRD interface
HIS332Ø2	FORM-16 mainline
HIS332Ø3	FORM16A subroutine
HIS332Ø4	FORM16B subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUM-BY-TRAFFICWAY Program

Source Module	Language	Function
HIS332Ø5	PL/I	SUM-BY-TRAFFICWAY mainline
HIS332Ø6	PL/I	SUMTRFA subroutine
HIS332Ø7	PL/I	SUMTRFB subroutine
HIS332Ø8	PL/I	SUMTRFC subroutine

Load Module	Entry Point	Library	Function
HIS332Ø5	PLISTART	HIS.REL4PTØ	SUM-BY-TRAFFICWAY

The HIS332Ø5 Source Module - This module is the SUM-BY-TRAFFICWAY mainline. It contains the following external references:

PRINTER,DUMP - PRINT subroutine

SUMTRFA - SUMTRFA subroutine

SUMTRFB - SUMTRFB subroutine

SUMTRFC - SUMTRFC subroutine

The HIS332Ø6 Source Module - This module is the SUMTRFA subroutine. It reads the accident files and performs the calculations required for the summary. When called by the mainline, a binary fixed(15) variable and an array of binary fixed(15) variables with bounds (1:5,1:2,1:525) are passed. SUMTRFA returns a value in the first variable that indicates the type of location parameter specified on the command (see the HIS332Ø3 source module above). During the execution of SUMTRFA, the passed array is divided into 1Ø subarrays (the first is the array (1,1,*), the second is the array (1,2,*), the third is the array (2,1,*), etc). Within each subarray is 525 variables used for storing values of a given type (such as interstate fatal or primary non-fatal). This method of dividing the array is the most efficient during the calculations phase because based storage can be used to address one of the ten subarrays, thereby reducing substantially the array bound calculations that would be needed if three bounds were specified each time an element of the array is referred to. The SUMTRFA program has the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine
ACCRD,ACCRDF,ACCRDO,ACCRDC - ACCRD subroutine
GETDAY - GETDAY subroutine
CNVSTAT - CNVSTAT subroutine

The HIS332Ø7 Source Module - This module is the SUMTRFB subroutine. It rearranges the array produced by SUMTRFA into a format that is more efficient for use by the print-out subroutine. After SUMTRFB executes, the array is broken down into a number of subarrays, each of which contains all of the values needed in one of the summaries that will be printed by SUMTRFC. SUMTRFB contains no external references.

The HIS332Ø8 Source Module - This module is the SUMTRFC subroutine. It prints the SUM-BY-TRAFFICWAY summaries from the values stored in the array produced by SUMTRFB. The module contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETHDGS,SETINST,DUMP,SETNEW - PRINT subroutine
CNVSTAT - CNVSTAT subroutine
INCNTY - INCNTY subroutine

The HIS332Ø5 Load Module - The SUM-BY-TRAFFICWAY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9ØØ	CNVSTAT subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS21142	INCNTY subroutine
* HIS33Ø91	ACCRD interface
HIS332Ø5	SUM-BY-TRAFFICWAY mainline
HIS332Ø6	SUMTRFA subroutine
HIS332Ø7	SUMTRFB subroutine
HIS332Ø8	SUMTRFC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The MOTORCYCLE-SUMMARY Program

Source Module	Language	Function
HIS332Ø9	PL/I	MOTORCYCLE-SUMMARY mainline
HIS3321Ø	PL/I	CYCLE1 subroutine
HIS33211	PL/I	CYCLE2 subroutine
HIS33212	PL/I	CYCLE3 subroutine

Load Module	Entry Point	Library	Function
HIS332Ø9	PLISTART	HIS.REL4PTØ	MOTORCYCLE-SUMMARY

The HIS332Ø9 Source Module - This module is the mainline program of MOTORCYCLE-SUMMARY. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

CYCLE1 - CYCLE1 subroutine

CYCLE2 - CYCLE2 subroutine

CYCLE3 - CYCLE3 subroutine

The HIS3321Ø Source Module - This module is the CYCLE1 subroutine. It reads the accident files and performs calculations for the summaries. A set of four arrays is passed by the mainline programs, and CYCLE1 stores the results of its calculations into these arrays. CYCLE1 has the following external references:

INCITY - INCITY subroutine
PRINTER,PRINT,DUMP - PRINT subroutine
ACCRD,ACCRDF,ACCRDO,ACCRDC - ACCRD subroutine
GETDAY - GETDAY subroutine

The HIS33211 Source Module - This module is the CYCLE2 subroutine. It rearranges the arrays produced by CYCLE1 into formats more easily and efficiently handled by CYCLE3. CYCLE2 contains no external references.

The HIS33212 Source Module - This module is the CYCLE3 subroutine. It prints the motorcycle summaries using the arrays produced by CYCLE2. The module contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST - PRINT subroutine
INCNTY - INCNTY subroutine

The HIS332Ø9 Load Module - The MOTORCYCLE-SUMMARY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS21Ø12	INCITY subroutine
* HIS21142	INCNTY subroutine
* HIS33Ø91	ACCRD interface
HIS332Ø9	MOTORCYCLE-SUMMARY mainline
HIS3321Ø	CYCLE1 subroutine
HIS33211	CYCLE2 subroutine
HIS33212	CYCLE3 subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COUNT-ACCIDENTS Program

Source Module	Language	Function
HIS33213	PL/I	COUNT-ACCIDENTS mainline

Load Module	Entry Point	Library	Function
HIS33213	PLISTART	HIS.REL4PTØ	COUNT-ACCIDENTS

The HIS33213 Source Module - This module is the mainline program of COUNT-ACCIDENTS. It contains the following external references:

PRINTER,PRINT,SETHDGS,DUMP - PRINT subroutine

ACCRD,ACCRDF,ACCRDC - ACCRD subroutine

The HIS33213 Load Module - The COUNT-ACCIDENTS load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS33Ø91	ACCRD interface
HIS33213	COUNT-ACCIDENTS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The TA-1 Program

Source Module	Language	Function
HIS33214	PL/I	TA-1 mainline
HIS33215	PL/I	TA1CALA subroutine
HIS33216	PL/I	TA1CALB subroutine
HIS33217	PL/I	TA1PRNT subroutine

Load Module	Entry Point	Library	Function
HIS33214	PLISTART	HIS.REL4PTØ	TA-1

The HIS33214 Source Module - This module is the TA-1 mainline. It contains the following external references:

PRINTER - PRINT subroutine
TA1CALA - TA1CALA subroutine
TA1CALB - TA1CALB subroutine
TA1PRNT - TA1PRNT subroutine

The HIS33215 Source Module - This module is the TA1CALA subroutine. It is the first of two calculation subroutines. It performs calculations for rural on-system accidents, using the accident directory file. The module contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine
RLGRDQ,RLGRDQF,RLGRDQX,RLGRDQC - RLGRDQ subroutine
ACCRD,ACCRDF,ACCRDC - ACCRD subroutine
INCITY - INCITY subroutine

The HIS33216 Source Module - This module is the TA1CALB subroutine. It is the second calculation subroutine. It performs calculations for off-system accidents and for municipal on-system accidents, using the accident detail file. The module contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine
ACCRD,ACCRDF,ACCRDC - ACCRD subroutine
INCITY - INCITY subroutine

The HIS33217 Source Module - This module is the TA1PRNT subroutine. It prints the summary using the values provided by the calculation subroutines. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

The HIS33214 Load Module - The TA-1 load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS33Ø91	ACCRD interface
HIS33214	TA-1 mainline
HIS33215	TA1CALA subroutine
HIS33216	TA1CALB subroutine
HIS33217	TA1PRNT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The ACCIDENT-BY-SECTIONS Program

Source Module	Language	Function
HIS3325Ø	PL/I	ACCIDENT-BY-SECTIONS mainline

Load Module	Entry Point	Library	Function
HIS3325Ø	PLISTART	HIS.REL4PTØ	ACCIDENT-BY-SECTIONS

The HIS3325Ø Source Module - This module is the mainline program of ACCIDENT-BY-SECTIONS. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETNEW,SETHDGS,SETLINK,DUMP - PRINT subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

INCITY - INCITY subroutine

SETINST - PRINT subroutine

The HIS3325Ø Load Module - The ACCIDENT-BY-SECTIONS load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
HIS3325Ø	ACCIDENT-BY-SECTIONS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The Accident-by-Sections Table - The accident-by-sections table is member ACCSECT of library HIS.TABLES. It contains loss values by year as reported by the National Safety Council. The records have the following format:

Columns	Length	Format	Data Element
1-2	2	pic'99'	Year
3-6	4	pic'zzz9'	Property damage loss
7-11	5	pic'zzzz9'	Injury loss
12-18	7	pic'zzzzzz9'	Fatality loss
19-8Ø	62		Unused

The RURAL-ACC-CLUSTERS Program

Source Module	Language	Function
HIS3331Ø	PL/I	RURAL-ACC-CLUSTERS mainline

Load Module	Entry Point	Library	Function
HIS3331Ø	PLISTART	HIS.REL4PTØ	RURAL-ACC-CLUSTERS

The HIS3331Ø Source Module - This module is the mainline program of RURAL-ACC-CLUSTERS. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine

POINTQ,POINTQO,POINTQC - POINTQ subroutine

TRFRDQ,TRFRDQF,TRFRDQR,TRFRDQT,TRFRDQC - TRFRDQ subroutine

ACCRD,ACCRDF,ACCRDC - ACCRD subroutine

DATE4 - DATE4 subroutine

The HIS33310 Load Module - The RURAL-ACC-CLUSTERS load module contains the following source modules:

Source Module	Function
* HIS20050	PRINT interface
* HIS20051	FETCH interface
* HIS20058	GETLIST subroutine
* HIS20902	GETDATE subroutine
* HIS20907	DATE2 subroutine
* HIS20909	DATE4 subroutine
* HIS31001	TRFRDQ interface
* HIS32021	POINTQ interface
* HIS33091	ACCRD interface
HIS33310	RURAL-ACC-CLUSTERS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The RURAL-ACC-ANALYSIS Program

Source Module	Language	Function
HIS33311	PL/I	RURAL-ACC-ANALYSIS mainline
HIS33312	PL/I	DIAGRAM subroutine
HIS33313	PL/I	SUMMARY subroutine
HIS33314	PL/I	TRAFIC subroutine

Load Module	Entry Point	Library	Function
HIS33311	PLISTART	HIS.REL4PT0	RURAL-ACC-ANALYSIS

The HIS33311 Source Module - This module is the RURAL-ACC-ANALYSIS mainline program. It contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine

DIAGRAM - DIAGRAM subroutine

TRAFIC - TRAFIC subroutine

SUMMARY - SUMMARY subroutine

The HIS33312 Source Module - This module is the DIAGRAM subroutine. It is the first of the three RURAL-ACC-ANALYSIS subroutines called by the mainline program. It prints a diagram of the roadway section showing accident locations and roadlog information. The module contains the following external references:

PRINTER,PRINT,SETHDGS,SETPOS - PRINT subroutine

The HIS33313 Source Module - This module is the SUMMARY subroutine. It is the last of the three subroutines to be called by the mainline program. It prints listings of accident information for the roadway section. SUMMARY contains the following external references:

PRINTER,PRINT,SETHDGS,SETPOS,SETLINK - PRINT subroutine
GETDAY - GETDAY subroutine

The HIS33314 Source Module - This module is the TRAFIC subroutine. It is the second of the three subroutines to be called by the mainline program. It computes and prints traffic count information for the roadway section. TRAFIC contains the following external references:

PRINTER,PRINT,SETPOS,SETHDGS - PRINT subroutine
CALJUL - CALJUL subroutine

Note: CALJUL is a subroutine written by the Montana Department of Highways. It is stored in the library SYS1.SYSTEMS.

The HIS33311 Load Module - The RURAL-ACC-ANALYSIS load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø1	GETDAY subroutine
	HIS33311	RURAL-ACC-ANALYSIS mainline
	HIS33312	DIAGRAM subroutine
	HIS33313	SUMMARY subroutine
	HIS33314	TRAFIC subroutine
**	CALJUL	CALJUL subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

** Must be included from SYS1.SYSTEMS.

The HIGH-ACC-INTERSECTNS Program

Source Module	Language	Function
HIS3332Ø	PL/I	HIGH-ACC-INTERSECTNS mainline
HIS33321	PL/I	INSCTNA subroutine
HIS33322	PL/I	INSCTNB subroutine
HIS33323	PL/I	INSCTNC subroutine
HIS33324	PL/I	INSCTND subroutine

Load Module	Entry Point	Library	Function
HIS3332Ø	PLISTART	HIS.REL4PTØ	HIGH-ACC-INTERSECTNS

The HIS3332Ø Source Module - This module is the mainline program of HIGH-ACC-INTERSECTNS. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine

INSCTNA - INSCTNA subroutine

INSCTNB - INSCTNB subroutine

INSCTNC - INSCTNC subroutine

INSCTND - INSCTND subroutine

The HIS33321 Source Module - This module is the INSCTNA subroutine. It prints the options specified by the user on his command and checks for mistakes in the command. If processing #-INTERSECTIONS or #-ACCIDENTS, INSCTNA reads the grid table records for the specified city and writes them to a scratch file for use by the other subroutines, and returns a count of the number of records to the mainline program. If processing individual intersections, INSCTNA performs these steps:

1. Read and print the user-supplied intersection names.
2. Read the grid table and write only the records for the specified intersections to the scratch file (a count of these records is returned to the mainline program).
3. Print an error message for each specified intersection name for which no entry was found in the grid table.

INSCTNA contains the following external references:

PRINTER,PRINT,SETPOS,SETNEW,SETINST,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine
CVTCITY - CVTCITY subroutine

The HIS33322 Source Module - This module is the INSCTNB subroutine. It creates an indexed-sequential directory file containing the selected accidents within the specified city. The key of the file consists of a 4-digit intersection number followed by the 12-digit accident number. The intersection number is a number assigned by HIGH-ACC-INTERSECTIONS, and is the record number of the grid table entry for the intersection. The records in the directory file are in order by intersection number so that all of the accidents occurring at a given intersection are stored together in the file. INSCTNB contains the following external references:

PRINTER,PRINT,SETPOS,SETNEW,SETINST,DUMP - PRINT subroutine
ACCRD,ACCRDF,ACCRDC - ACCRD subroutine
CVTCITY - CVTCITY subroutine
DUMPDD - DUMPDD subroutine

The HIS33323 Source Module - This module is the INSCTNC subroutine. It creates a sequential index file containing a count of the number of accidents at each intersection. The file is sorted in descending order by the count field. INSCTNC contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine

The HIS33324 Source Module - This module is the INSCTND subroutine. It prints the listings based on the index file and directory file generated by INSCTNB and INSCTNC. It contains the following external references:

PRINTER,PRINT,SETPOS,SETINST,SETLINK,SETHDGS,DUMP - PRINT subroutine
VACRDQ,VACRDQF,VACRDQX,VACRDQC - VACRDQ subroutine
DUMPDD - DUMPDD subroutine
GETDAY - GETDAY subroutine
CVTCITY - CVTCITY subroutine

The HIS3332Ø Load Module - The HIGH-ACC-INTERSECTN load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS33Ø11	VACRDQ interface
* HIS33Ø91	ACCRD interface
HIS3332Ø	HIGH-ACC-INTERSECTNS mainline
HIS33321	INSCTNA subroutine
HIS33322	INSCTNB subroutine
HIS33323	INSCTNC subroutine
HIS33324	INSCTND subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The ACC-MILEPOINT-ADJUST Program

Source Module	Language	Function
HIS335ØØ	PL/I	ACC-MILEPOINT-ADJUST mainline
HIS335Ø1	PL/I	ADJUSTE subroutine
HIS335Ø2	PL/I	ADJUSTC subroutine
HIS335Ø3	PL/I	ADJUSTU subroutine

Load Module	Entry Point	Library	Function
HIS335ØØ	PLISTART	HIS.REL4PTØ	ACC-MILEPOINT-ADJUST

The HIS335ØØ Source Module - This module is the mainline program of ACC-MILEPOINT-ADJUST. It contains the following external references:

PRINTER,PRINT,SETNEW,SETINST,DUMP - PRINT subroutine

ADJUSTE - ADJUSTE subroutine

ADJUSTC - ADJUSTC subroutine

ADJUSTU - ADJUSTU subroutine

The HIS335Ø1 Source Module - This module is the ADJUSTE subroutine. It performs these functions:

1. Check for valid command parameters.
2. Read the user-supplied data cards and check for validity.
3. Write valid data cards to scratch file.

ADJUSTE contains these external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDG,SETINST,DUMP - PRINT subroutine
DATE4 - DATE4 subroutine
DUMPDD - DUMPDD subroutine
DATEDIT - DATEDIT subroutine

The HIS335Ø2 Source Module - This module is the ADJUSTC subroutine. It reads the file built by ADJUSTE together with the accident directory file and calculates the required new keys. The output from ADJUSTC is a second scratch file. ADJUSTC contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETHDG,SETINST,DUMP - PRINT subroutine
ACDRDQ,ACDRDQF,ACDRDQR,ACDRDQC - ACDRDQ subroutine
POINTQ,POINTQO,POINTQC - POINTQ subroutine
DATE4 - DATE4 subroutine

The HIS335Ø3 Source Module - This module is the ADJUSTU subroutine. It reads the scratch file built by ADJUSTC together with the accident detail file, and performs updates to the detail file. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
DATE4 - DATE4 subroutine

The HIS335ØØ Load Module - The ACC-MILEPOINT-ADJUST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS32Ø21	POINTQ interface
* HIS33Ø21	ACDRDQ interface
HIS335ØØ	ACC-MILEPOINT-ADJUST mainline
HIS335Ø1	ADJUSTE subroutine
HIS335Ø2	ADJUSTC subroutine
HIS335Ø3	ADJUSTU subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE-ACC-BY-SECTN Program

Source Module	Language	Function
HIS336ØØ	PL/I	CREATE-ACC-BY-SECTN mainline
HIS336Ø1	PL/I	AREP1 subroutine
HIS336Ø2	PL/I	AREP2 subroutine

Load Module	Entry Point	Library	Function
HIS336ØØ	PLISTART	HIS.REL4PTØ	CREATE-ACC-BY-SECTN

The HIS336ØØ Source Module - This module is the mainline program of CREATE-ACC-BY-SECTN. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

AREP1 - AREP1 subroutine

AREP2 - AREP2 subroutine

PTR_BLK - pointer to CREATE-ACC-BY-SECTN communications block

The HIS336Ø1 Source Module - This module is the AREP1 subroutine, also known as the "sections phase." It builds a skeleton accident report file using the section breaks in the traffic file. It contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
TRFRDQ,TRFRDQI,TRFRDQT,TRFRDQC - TRFRDQ subroutine
PTR_BLK - pointer to CREATE-ACC-BY-SECTN communications block

The HIS336Ø2 Source Module - This module is the AREP2 subroutine, also known as the "roadlog/accident phase." It reads the skeleton file and fills in information from HIS files to complete the records. It contains the following external references:

PRINTER,PRINT,PRINTA,DUMP - PRINT subroutine
TRFRDQ,TRFRDQF,TRFRDQC - TRFRDQ subroutine
RLGRDQ,RLGRDQI,RLGRDQC - RLGRDQ subroutine
ACDRDQ,ACDRDQI,ACDRDQC - ACDRDQ subroutine
DACRDB,DACRDBC - DACRDB subroutine
DISTQ,DISTQO,DISTQC - DISTQ subroutine
VEHMILE,VEHMILC - VEHMILE subroutine
GETDAY - GETDAY subroutine
PTR_BLK - pointer to CREATE-ACC-BY-SECTN communications block

The HIS336ØØ Load Module - The CREATE-ACC-BY-SECTN load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31ØØ1	TRFRDQ interface
* HIS311ØØ	VEHMILE subroutine
* HIS32Ø25	DISTQ interface
* HIS33ØØ3	DACRDB interface
* HIS33Ø21	ACDRDQ interface
HIS336ØØ	CREATE-ACC-BY-SECTN mainline
HIS3361Ø1	AREP1 subroutine
HIS3361Ø2	AREP2 subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-ACC-BY-SECTN Program

Source Module	Language	Function
HIS3362Ø	PL/I	LIST-ACC-BY-SECTN mainline

Load Module	Entry Point	Library	Function
HIS3362Ø	PLISTART	HIS.REL4PTØ	LIST-ACC-BY-SECTN

The HIS3362Ø Source Module - This source module is the LIST-ACC-BY-SECTN mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine

The HIS3362Ø Load Module - The LIST-ACC-BY-SECTN load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS3362Ø	LIST-ACC-BY-SECTN mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE-FA-ACC-DIREC Program

Source Module	Language	Function
HIS3363Ø	PL/I	CREATE-FA-ACC-DIREC mainline
HIS33631	Assembler	DIRCRT subroutine
HIS33632	PL/I	DIRSORT subroutine
HIS33633	Assembler	DIRLOAD subroutine

Load Module	Entry Point	Library	Function
HIS3363Ø	PLISTART	HIS.REL4PTØ	CREATE-FA-ACC-DIREC

The HIS3363Ø Source Module - This module is the mainline program of CREATE-FA-ACC-DIREC. It contains the following external references:

PRINTER,SETHDG - PRINT subroutine
DIRCRT - DIRCRT subroutine
DIRSORT - DIRSORT subroutine
DIRLOAD - DIRLOAD subroutine

The HIS33631 Source Module - This module is the DIRCRT subroutine. It reads the accident detail file and writes a directory-format record to a scratch file for each rural on-system accident. It contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
DACRDQ,DACRDQF,DACRDQC - DACRDQ subroutine
TESTPTW - TESTPTW subroutine
POINTQC - POINTQ subroutine

The HIS33632 Source Module - This module is the DIRSORT subroutine. It sorts the scratch file built by DIRCRT in order so that it can be loaded into an indexed-sequential file. DIRSORT contains the following external reference:

DUMP - DUMP subroutine (DUMP entry point of PRINT)

The HIS33633 Source Module - This module is the DIRLOAD subroutine. It loads the directory file using the sorted file produced by DIRSORT. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
RLGRDQ,RLGRDQF,RLGRDQC - RLGRDQ subroutine
ACDWRQ,ACDWRQC - ACDWRQC subroutine

The HIS3363Ø Load Module - The CREATE-FA-ACC-DIREC load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21112	INPTW subroutine
* HIS21113	TESTPTW subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS3Ø1ØØ	COINKEY subroutine
* HIS32Ø21	POINTQ interface
* HIS33ØØ3	DACRDQ interface
* HIS33Ø22	ACDWRQ subroutine
HIS3363Ø	CREATE-FA-ACC-DIREC mainline
HIS33631	DIRCRT subroutine
HIS33632	DIRSORT subroutine
HIS33633	DIRLOAD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-FA-ACC-DIREC Program

Source Module	Language	Function
HIS3364Ø	PL/I	LIST-FA-ACC-DIREC mainline

Load Module	Entry Point	Library	Function
HIS3364Ø	PLISTART	HIS.REL4PTØ	LIST-FA-ACC-DIREC

The HIS3364Ø Source Module - This source module is the mainline program of LIST-FA-ACC-DIREC. It contains the following external references:

PRINTER,PRINT,SETPOS,SETPOSA,SETHDG,SETINST,SETNEW,DUMP - PRINT subroutine

ACCRD,ACCRDF,ACCRDC - ACCRD subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The HIS3364Ø Load Module - The LIST-FA-ACC-DIREC load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS33Ø91	ACCRD interface
HIS3364Ø	LIST-FA-ACC-DIREC mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE and EDIT Programs

Source Module	Language	Function
HIS337ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS337Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS337Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS33712	PL/I	ACCEDIT subroutine
HIS33713	PL/I	ACCED2 subroutine
HIS33714	PL/I	RDACCED subroutine
HIS33735	PL/I	EDIT mainline

Load Module	Entry Point	Library	Function
HIS337ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS337Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS337Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE
HIS33735	PLISTART	HIS.REL4PTØ	EDIT

The HIS337ØØ Source Module - This module is the mainline program of the delete function. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

The HIS337Ø1 Source Module - This module is the mainline program of the insert function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine

ACCEDIT,ACCEDI,ACCEDC - ACCEDIT subroutine

CVTACC,CVTDETA,CVTVEHA - CVTACC subroutine

DUMPDD - DUMPDD subroutine

The HIS337Ø3 Source Module - This module is the mainline program of the rewrite function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine
ACCEDIT,ACCEDI,ACCEDC - ACCEDIT subroutine
CVTACC,CVTDETA,CVTDETB,CVTVEHA,CVTVEHB - CVTACC subroutine

The HIS33712 Source Module - This module is the ACCEDIT subroutine. It performs edit checks on accident data cards. The edit checks performed by ACCEDIT are new for release 4.Ø of the Highway Information System. The edit checks carried over from release 3.Ø are performed by ACCED2 (module HIS33713). When ACCEDIT is called, three parameters are passed. The first parameter is a pointer which must contain the address of the following structure:

```
1  S_S,
   2  S_A       CHARACTER(8Ø),    A card
   2  S_B       CHARACTER(8Ø),    B card
   2  S_C(3Ø)   CHARACTER(8Ø),    Up to 3Ø C cards
   2  S_D(3Ø)   CHARACTER(8Ø),    Up to 3Ø D cards
   2  S_I(5)    CHARACTER(5),     Up to 5 I cards
   2  #_C       FIXED(3),         Number of C cards
   2  #_D       FIXED(3),         Number of D cards
   2  #_I       FIXED(3),         Number of I cards
```

The second parameter is a binary fixed(15) return code, which is set by ACCEDIT to one of the following:

Ø No severe errors or warnings detected
1 One or more warnings but no severe errors detected
2 One or more severe errors detected

The third parameter is a binary fixed(15) code, which ACCEDIT sets to indicate the type of location specified for the accident:

1 Route number only
2 Route number and milepoint
3 Route number and city coordinates
4 City coordinates only
5 Range, township, and section
6 No location specified
7 Location field uninterpretable

After performing its own edit checks, ACCEDIT calls ACCED2 to perform the checks carried over from release 3.Ø. ACCEDIT contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETINST,DUMP - PRINT subroutine
KEYRLG - KEYRLG subroutine
RLGRDQ,RLGRDQF,RLGRDQM,RLGRDQC - RLGRDQ subroutine
POINTQ,POINTQO,POINTQC - POINTQ subroutine
GETCITY,GETCITI,GETCITC - GETCITY subroutine
TABLRD,TABLRDI,TABLRDC - TABLRD subroutine
INCNTY - INCNTY subroutine
ACCED2 - ACCED2 subroutine
DATEDIT - DATEDIT subroutine
RDACCED - RDACCED subroutine

The HIS33713 Source Module - This module is the ACCED2 subroutine. It performs the edit checks that have been carried over from release 3.Ø of HIS. It is called by the ACCEDIT subroutine. It contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine

The HIS33714 Source Module - This module is the RDACCED subroutine. It reads the accident edit table into a core array for use by ACCEDIT. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,DUMP - PRINT subroutine
TABLRD,TABLRDI,TABLRDC - TABLRD subroutine
CHECKDD - CHECKDD subroutine

The HIS33735 Source Module - This module is the mainline program of EDIT. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine
ACCRD,ACCRDF,ACCRDC - ACCRD subroutine
ACCEDIT,ACCEDI,ACCEDC - ACCEDIT subroutine
CVTACC,CVTDETB,CVTVEHB - CVTACC subroutine
DATE4 - DATE4 subroutine

The HIS337ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS337ØØ	UPDATE,FUNCTION=DELETE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS337Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS21Ø16	GETCITY subroutine
* HIS21Ø18	CNTCITY subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS3Ø1Ø1	KEYRLG subroutine
* HIS32Ø21	POINTQ interface
HIS337Ø1	UPDATE,FUNCTION=INSERT mainline
HIS33712	ACCEDIT subroutine
HIS33713	ACCED2 subroutine
HIS33714	RDACCED subroutine
* HIS33715	CVTACC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS337Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ58	GETLIST subroutine

(Continued on next page)

	Source Module	Function
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS21Ø16	GETCITY subroutine
*	HIS21Ø18	CNTCITY subroutine
*	HIS21142	INCNTY subroutine
*	HIS3ØØØ1	RLGRDQ subroutine
*	HIS3Ø1Ø1	KEYRLG subroutine
*	HIS32Ø21	POINTQ interface
	HIS337Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS33712	ACCEDIT subroutine
	HIS33713	ACCED2 subroutine
	HIS33714	RDACCED subroutine
*	HIS33715	CVTACC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS33735 Load Module - The EDIT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ56	CHECKDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS21Ø16	GETCITY subroutine
*	HIS21Ø18	CNTCITY subroutine
*	HIS21142	INCNTY subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS3Ø1Ø1	KEYRLG subroutine
*	HIS32Ø21	POINTQ interface
*	HIS33Ø91	ACCRD interface
	HIS33712	ACCEDIT subroutine
	HIS33713	ACCED2 subroutine
	HIS33714	RDACCED subroutine
*	HIS33715	CVTACC subroutine
	HIS33735	EDIT mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The Accident Edit Table - The accident edit table is a member of HIS.TABLES used by the ACCEDIT subroutine when performing edit checks. The table specifies, for each error message implemented in ACCEDIT, whether or not the message is a severe error and whether or not the message is disabled. The record format of the accident edit table is:

Columns	Length	Format	Data Element
1-7	7	char(7)	Message number (e.g., ACC-Ø21)
8	1	char(1)	Blank
9	1	char(1)	Message type code
1Ø-8Ø	71	char(71)	Unused

The message type codes are:

S Severe error
W Warning
D Disabled

The COPY, CREATE, and REORGANIZE Programs

Source Module	Language	Function
HIS331Ø2	Assembler	COPYACC subroutine
HIS331Ø3	Assembler	CRTACC subroutine
HIS3372Ø	PL/I	COPY mainline
HIS33721	PL/I	CREATE mainline
HIS33722	PL/I	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS3372Ø	PLISTART	HIS.REL4PTØ	COPY
HIS33721	PLISTART	HIS.REL4PTØ	CREATE
HIS33722	PLISTART	HIS.REL4PTØ	REORGANIZE

The HIS331Ø2 Source Module - This module is the COPYACC subroutine. It prepares a backup copy of the accident detail and vehicle files. When called, a binary fixed(31) variable is passed. A count of the number of accidents copied is returned. The module contains no external references.

The HIS331Ø3 Source Module - This module is the CRTACC subroutine. It reloads the accident detail and vehicle files from a backup copy. A binary fixed(31) variable is passed to CRTACC. A count of the number of accidents loaded is returned. CRTACC contains the following external references:

PRINT,SETINST - PRINT subroutine

The HIS3372Ø Source Module - This module is the mainline program of COPY. It contains the following external references:

PRINTER,PRINT - PRINT subroutine
COPYACC - COPYACC subroutine

The HIS33721 Source Module - This module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT - PRINT subroutine
CRTACC - CRTACC subroutine

The HIS33722 Source Module - This module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT - PRINT subroutine
COPYACC - COPYACC subroutine
CRTACC - CRTACC subroutine

The HIS3372Ø Load Module - The COPY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS331Ø2	COPYACC subroutine
HIS3372Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS33721 Load Module - The CREATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS331Ø3	CRTACC subroutine
HIS33721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS33722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS331Ø2	COPYACC subroutine
HIS331Ø3	CRTACC subroutine
HIS33722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS331ØØ	PL/I	PRNTDET subroutine
HIS331Ø1	PL/I	PRNTVEH subroutine
HIS33731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS33731	PLISTART	HIS.REL4PTØ	LIST

The HIS331ØØ Source Module - This module is the PRNTDET subroutine. It prints a formatted listing of an accident detail record, and is called only for LIST=FORMATTED. The module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine

GETDAY - GETDAY subroutine

The HIS331Ø1 Source Module - This module is the PRNTVEH subroutine. It prints a formatted listing of one or more vehicle records, and is called only for LIST=FORMATTED. The module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine

The HIS33731 Source Module - This module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETHDGS,SETINST - PRINT subroutine

ACCRD,ACCRDF,ACCRDC - ACCRD subroutine

CVTACC,CVTDETB,CVTVEHB - CVTACC subroutine

The HIS33731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø1	GETDAY subroutine
* HIS33Ø91	ACCRD interface
HIS331ØØ	PRNTDET subroutine
HIS331Ø1	PRNTVEH subroutine
* HIS33715	CVTACC subroutine
HIS33731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

Note: When link-editing, include the control statement:

INCLUDE SUBRTN4(CVTACC)

The PRINT-MEMOS Program

Source Module	Language	Function
HIS33732	PL/I	PRINT-MEMOS mainline
HIS33733	PL/I	PMEMO subroutine

Load Module	Entry Point	Library	Function
HIS33732	PLISTART	HIS.REL4PTØ	PRINT-MEMOS

The HIS33732 Source Module - This module is the mainline program of PRINT-MEMOS. It creates the memos file and then calls PMEMO. It contains the following external references:

SETINST - PRINT subroutine
PMEMO - PMEMO subroutine

The HIS33733 Source Module - This module is the PMEMO subroutine. It sorts the memos file into order by name and prints the memos. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,SETDD - PRINT subroutine
INCNTY - INCNTY subroutine
INCITY - INCITY subroutine

The HIS33732 Load Module - The PRINT-MEMOS load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS21142	INCNTY subroutine
HIS33732	PRINT-MEMOS mainline
HIS33733	PMEMO subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The RESTART-MEMOS Program

Source Module	Language	Function
HIS33734	PL/I	RESTART-MEMOS mainline

Load Module	Entry Point	Library	Function
HIS33734	PLISTART	HIS.REL4PTØ	RESTART-MEMOS

The HIS33734 Source Module - This module is the mainline program of RESTART-MEMOS. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,SETDD - PRINT subroutine

INCNTY - INCNTY subroutine

INCITY - INCITY subroutine

The HIS33734 Load Module - The RESTART-MEMOS load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS21Ø12	INCITY subroutine
*	HIS21142	INCNTY subroutine
	HIS33734	RESTART-MEMOS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 3

BRIDGE SUBSYSTEM

The bridge subsystem is also known as the HIS35 subsystem. The names of source modules and load modules of the bridge subsystem have the format HIS35xxx where "xxx" is a 3-digit number.

This chapter describes the source modules and load modules of the bridge subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Use of the programs and subroutines is described in the other HIS release 4.Ø publications.

The BDGRDQ Subroutine

Source Module	Language	Function
HIS35ØØØ	Assembler	BDGRDQ subroutine
HIS35ØØ1	Assembler	BDGRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS35ØØØ	BDGRDQE	HIS.REL4PTØ	BDGRDQ	BDGRDQ subroutine
BDGRDQ	---	HIS.SUBRTN4	--	BDGRDQ interface

The HIS35ØØØ Source Module - This module is the BDGRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS35ØØ1 Source Module - This module is the BDGRDQ interface. It is linked with programs that call BDGRDQ. When called, it retrieves BDGRDQ into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The HIS35ØØØ Load Module - This load module is retrieved by the BDGRDQ interface subroutine when BDGRDQ is needed. It contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS35ØØØ	BDGRDQ subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The BDGRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGRDQ by automatic call. It consists of the HIS35ØØ1 source module.

The BDGINB Subroutine

Source Module	Language	Function
HIS35ØØ2	PL/I	BDGINB subroutine

The HIS35ØØ2 Source Module - This module is the BDGINB subroutine. It contains no external references.

The BDGRWB Subroutine

Source Module	Language	Function
HIS35ØØ3	PL/I	BDGRWB Subroutine

The HIS35ØØ3 Source Module - This module is the BDGRWB subroutine. It contains no external references.

The BDGRD Subroutine

Source Module	Language	Function
HIS35Ø1Ø	Assembler	BDGRD subroutine
HIS35Ø11	Assembler	BDGRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS35Ø1Ø	BDGRDE	HIS.REL4PTØ	BDGRD	BDGRD subroutine
BDGRD	--	HIS.SUBRTN4	---	BDGRD interface

The HIS35Ø1Ø Source Module - This module is the BDGRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The module contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

BDGRDQ,BDGRDQF,BDGRDQR,BDGRDQC - BDGRDQ subroutine

The HIS35Ø11 Source Module - This module is the BDGRD interface. It is linked with programs that call BDGRD. When called, it loads the BDGRD subroutine into storage and passes control to it. The module contains the following external reference:

FETCH - FETCH subroutine

The HIS35Ø1Ø Load Module - This load module is loaded into storage by the BDGRD interface when BDGRD is needed. It contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS35ØØ1	BDGRDQ interface
HIS35Ø1Ø	BDGRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The BDGRD Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGRD by automatic call. It consists of the HIS35Ø11 source module.

The BDRRDQ Subroutine

Source Module	Language	Function
HIS35Ø2Ø	Assembler	BDRRDQ subroutine

Load Module	Library	Function
BDRRDQ	HIS.SUBRTN4	BDRRDQ subroutine

The HIS35Ø2Ø Source Module - This module is the BDRRDQ subroutine. It contains no external references.

The BDRRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of BDRRDQ by automatic call. It consists of the HIS35Ø2Ø source module.

The BDGIRTE Subroutine

Source Module	Language	Function
HIS351ØØ	Assembler	BDGIRTE subroutine

Load Module	Library	Function
BDGIRTE	HIS.SUBRTN4	BDGIRTE subroutine

The HIS351ØØ Source Module - This source module is the BDGIRTE subroutine. It contains no external references.

The BDGIRTE Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGIRTE by automatic call. It consists of the HIS351ØØ source module.

The BDGTYPE Subroutine

Source Module	Language	Function
HIS351Ø1	Assembler	BDGTYPE subroutine

Load Module	Library	Function
BDGTYPE	HIS.SUBRTN4	BDGTYPE subroutine

The HIS351Ø1 Source Module - This module is the BDGTYPE subroutine. It contains no external references.

The BDGTYPE Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGTYPE by automatic call. It consists of the HIS351Ø1 source module.

The BDGSRTE Subroutine

Source Module	Language	Function
HIS351Ø2	Assembler	BDGSRTE subroutine

Load Module	Library	Function
BDGSRTE	HIS.SUBRTN4	BDGSRTE subroutine

The HIS351Ø2 Source Module - This source module is the BDGSRTE subroutine. It contains no external references.

The BDGSRTE Load Module - The BDGSRTE load module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGSRTE by automatic call. It consists of the HIS351Ø2 source module.

The BDGDLOD Subroutine

Source Module	Language	Function
HIS351Ø3	Assembler	BDGDLOD Subroutine

Load Module	Library	Function
BDGDLOD	HIS.SUBRTN4	BDGDLOD subroutine

The HIS351Ø3 Source Module - This source module is the BDGDLOD subroutine. It contains no external references.

The BDGDLOD Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of BDGDLOD by automatic call. It consists of the HIS351Ø3 source module.

The DEFRDI Subroutine

Source Module	Language	Function
HIS3511Ø	Assembler	DEFRDI subroutine

Load Module	Library	Function
DEFRDI	HIS.SUBRTN4	DEFRDI subroutine

The HIS3511Ø Source Module - This source module is the DEFRDI subroutine. It contains no external references.

The DEFRDI Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of DEFRDI by automatic call. It consists of the HIS3511Ø source module.

The DEFPNT Subroutine

Source Module	Language	Function
HIS35111	Assembler	DEFPNT subroutine

Load Module	Library	Function
DEFPNT	HIS.SUBRTN4	DEFPNT subroutine

The HIS35111 Source Module - This module is the DEFPNT subroutine. It contains no external references.

The DEFPNT Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of DEFPNT by automatic call. It consists of the HIS35111 source module.

The BDG-INVENTORY-LIST Program

Source Module	Language	Function
HIS352ØØ	PL/I	BDG-INVENTORY-LIST mainline

Load Module	Entry Point	Library	Function
HIS352ØØ	PLISTART	HIS.REL4PTØ	BDG-INVENTORY-LIST

The HIS352ØØ Source Module - This module is the mainline program of BDG-INVENTORY-LIST. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,SETLINK,SETNEW,DUMP - PRINT subroutine

BDGRDQ,BDGRDQF,BDGRDQR,BDGRDQC - BDGRDQ subroutine

RLGRDQ,RLGRDQF,RLGRDQT,RLGRDQX,RLGRDQL,RLGRDQC - RLGRDQ subroutine

ADT,ADTE,ADTC - ADT subroutine

BDGTYPE - BDGTYPE subroutine

BDGSRTE - BDGSRTE subroutine

The HIS352ØØ Load Module - The BDG-INVENTORY-LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31ØØ1	TRFRDQ interface
* HIS311Ø1	ADT subroutine
* HIS32Ø27	DISTB interface
* HIS35ØØ1	BDGRDQ interface
* HIS351Ø1	BDGTYPE subroutine
* HIS3512	BDGSRTE subroutine
HIS352ØØ	BDG-INVENTORY-LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The DEFENSE-BDG-LIST Program

Source Module	Language	Function
HIS3522Ø	PL/I	DEFENSE-BDG-LIST mainline

Load Module	Entry Point	Library	Function
HIS3522Ø	PLISTART	HIS.REL4PTØ	DEFENSE-BDG-LIST

The HIS3522Ø Source Module - This module is the DEFENSE-BDG-LIST mainline program. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

BDRRDQ,BDRRDQF,BDRRDQC - BDRRDQ subroutine

INCITY - INCITY subroutine

The HIS3522Ø Load Module - The DEFENSE-BDG-LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS35Ø2Ø	BDRRDQ subroutine
HIS3522Ø	DEFENSE-BDG-LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The PRE-ATTACK-BDG-TAPE Program

Source Module	Language	Function
HIS35221	PL/I	PRE-ATTACK-BDG-TAPE mainline

Load Module	Entry Point	Library	Function
HIS35221	PLISTART	HIS.REL4PTØ	PRE-ATTACK-BDG-TAPE

The HIS35221 Source Module - This source module is the mainline program of PRE-ATTACK-BDG-TAPE. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

BDRRDQ,BDRRDQF,BDRRDQC - BDRRDQ subroutine

DUMPDD - DUMPDD subroutine

The HIS35221 Load Module - The PRE-ATTACK-BDG-TAPE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS35Ø2Ø	BDRRDQ subroutine
HIS35221	PRE-ATTACK-BDG-TAPE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUM-BY-DESIGN-LOAD Program

Source Module	Language	Function
HIS35222	PL/I	SUM-BY-DESIGN-LOAD mainline

Load Module	Entry Point	Library	Function
HIS35222	PLISTART	HIS.REL4PTØ	SUM-BY-DESIGN-LOAD

The HIS35222 Source Module - This module is the mainline program of SUM-BY-DESIGN-LOAD. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

BDRRDQ,BDRRDQF,BDRRDQC - BDRRDQ subroutine

The HIS35222 Load Module - The SUM-BY-DESIGN-LOAD load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS35Ø2Ø	BDRRDQ subroutine
	HIS35222	SUM-BY-DESIGN-LOAD mainline

The DEFENSE-MILEAGE Program

Source Module	Language	Function
HIS35223	PL/I	DEFENSE-MILEAGE mainline

Load Module	Entry Point	Library	Function
HIS35223	PLISTART	HIS.REL4PTØ	DEFENSE-MILEAGE

The HIS35223 Source Module - This module is the mainline program of DEFENSE-MILEAGE. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

DISTQ,DISTQC - DISTQ subroutine

The HIS35223 Load Module - The DEFENSE-MILEAGE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS32Ø25	DISTQ interface
HIS35223	DEFENSE-MILEAGE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The BDG-INSPECTION-TAPE Program

Source Module	Language	Function
HIS3523Ø	PL/I	BDG-INSPECTION-TAPE mainline

Load Module	Entry Point	Library	Function
HIS3523Ø	PLISTART	HIS.REL4PTØ	BDG-INSPECTION-TAPE

The HIS3523Ø Source Module - This module is the mainline program of BDG-INSPECTION-TAPE. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

BDGRDQ,BDGRDQI,BDGRDQP,BDGRDQC - BDGRDQ subroutine

RLGRDQ,RLGRDQI,RLGRDQT,RLGRDQC - RLGRDQ subroutine

ADT,ADTE - ADT subroutine

DISTQ,DISTQC - DISTQ subroutine

The HIS3523Ø Load Module - The BDG-INSPECTION-TAPE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31ØØ1	TRFRDQ interface
* HIS311Ø1	ADT subroutine
* HIS32Ø25	DISTQ interface
* HIS32Ø27	DISTB interface
* HIS35ØØ1	BDGRDQ interface
HIS3523Ø	BDG-INSPECTION-TAPE mainline

The CREATE-BDGREP Program

Source Module	Language	Function
HIS356ØØ	PL/I	CREATE-BDGREP mainline

Load Module	Entry Point	Library	Function
HIS356ØØ	PLISTART	HIS.REL4PTØ	CREATE-BDGREP

The HIS356ØØ Source Module - This module is the CREATE-BDGREP mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine

RLGRDQ,RLGRDQF,RLGRDQT,RLGRDQL,RLGRDQC - RLGRDQ subroutine

DISTQ,DISTQO,DISTQC - DISTQ subroutine

BDGRDQ,BDGRDQF,BDGRDQP,BDGRDQX,BDGRDQC - BDGRDQ subroutine

DEFRDI,DEFRDIC - DEFRDI subroutine

BDGSRTE - BDGSRTE subroutine

BDGTYPE - BDGTYPE subroutine

BDGDLOD - BDGDLOD subroutine

DEFPNT - DEFPNT subroutine

ADT,ADTE,ADTC - ADT subroutine

DUMPDD - DUMPDD subroutine

The HIS356ØØ Load Module - The CREATE-BDGREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31ØØ1	TRFRDQ interface
* HIS311Ø1	ADT subroutine
* HIS32Ø25	DISTQ interface
* HIS32Ø27	DISTB interface
* HIS35ØØ1	BDGRDQ interface
* HIS351Ø1	BDGTYPE subroutine
* HIS351Ø2	BDGSRTE subroutine
* HIS351Ø3	BDGDLOD subroutine
* HIS3511Ø	DEFRDI subroutine
* HIS35111	DEFPNT subroutine
HIS356ØØ	CREATE-BDGREP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-BDGREP Program

Source Module	Language	Function
HIS356Ø1	PL/I	LIST-BDGREP mainline

Load Module	Entry Point	Library	Function
HIS356Ø1	PLISTART	HIS.REL4PTØ	LIST-BDGREP

The HIS356Ø1 Source Module - This source module is the mainline program of LIST-BDGREP. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETHDG,SETINST,SETLINK,DUMP - PRINT subroutine

BDRRDQ,BDRRDQF,BDRRDQC - BDRRDQ subroutine

The HIS356Ø1 Load Module - The LIST-BDGREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS35Ø2Ø	BDRRDQ subroutine
HIS3561	LIST-BDGREP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The DEFENSE-XREF Program

Source Module	Language	Function
HIS3561Ø	PL/I	DEFENSE-XREF mainline

Load Module	Entry Point	Library	Function
HIS3561Ø	PLISTART	HIS.REL4PTØ	DEFENSE-XREF

The HIS3561Ø Source Module - This module is the mainline program of DEFENSE-XREF. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETNEW,SETINST,DUMP - PRINT subroutine

The HIS3561Ø Load Module - The DEFENSE-XREF load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS3561Ø	DEFENSE-XREF mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE Program

Source Module	Language	Function
HIS357ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS357Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS357Ø2	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS357Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS3571Ø	PL/I	BDGRDC subroutine
HIS35711	PL/I	BDGCVT subroutine
HIS35712	PL/I	BDGEDIT subroutine

Load Module	Entry Point	Library	Function
HIS357ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS357Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS357Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS357Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE

The HIS357ØØ Source Module - This module is the mainline program of the delete function. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

BDGRWB,BDGRWBD,BDGRWBC - BDGRWB subroutine

The HIS357Ø1 Source Module - This module is the mainline program of the insert function. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

BDGINB,BDGINBC - BDGINB subroutine

BDGRDC,BDGRDCI - BDGRDC subroutine

BDGCVT - BDGCVT subroutine

BDGEDIT - BDGEDIT subroutine

The HIS357Ø2 Source Module - This module is the mainline program of the new-key function. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

The HIS357Ø3 Source Module - This module is the mainline program of the rewrite function. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine
BDGRDCI,BDGRDC - BDGRDC subroutine
BDGRWB,BDGRWBR,BDGRWBC - BDGRWB subroutine
BDGCVT,BDGCVTA - BDGCVT subroutine
BDGEDIT - BDGEDIT subroutine

The HIS3571Ø Source Module - This module is the BDGRDC subroutine. It reads data cards for the mainline programs of the insert and rewrite functions. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The HIS35711 Source Module - This module is the BDGCVT subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The HIS35712 Source Module - This module is the BDGEDIT subroutine. It performs edit checks on a bridge record. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The HIS357ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
	HIS35ØØ3	BDGRWB subroutine
	HIS357ØØ	UPDATE,FUNCTION=DELETE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS357Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
	HIS35ØØ2	BDGINB subroutine
	HIS357Ø1	UPDATE,FUNCTION=INSERT mainline
	HIS3571Ø	BDGRDC subroutine
	HIS35711	BDGCVT subroutine
	HIS35712	BDGEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS357Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
	HIS357Ø2	UPDATE,FUNCTION=NEW-KEY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS357Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
	HIS35ØØ3	BDGRWB subroutine
	HIS357Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS3571Ø	BDGRDC subroutine
	HIS35711	BDGCVT subroutine
	HIS35712	BDGEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3572Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3572Ø	COPY	HIS.REL4PTØ	COPY

The HIS3572Ø Source Module - This module is the mainline program of COPY. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3572Ø Load Module - The COPY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø5	PRINTER control section
*	HIS2Ø99Ø	BACKUP subroutine
	HIS3572Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS35721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS35721	CREATE	HIS.REL4PTØ	CREATE

The HIS35721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS35721 Load Module - The CREATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø991	LOAD subroutine
HIS35721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS35722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS35722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS35722 Source Module - This module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS35722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
* HIS2Ø991	LOAD subroutine
HIS35722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS35731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS35731	PLISTART	HIS.REL4PTØ	LIST

The HIS35731 Source Module - This module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,SETNEW,SETPOS,DUMP - PRINT subroutine

BDGRD,BDGRDF,BDGRDC - BDGRD subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The HIS35731 Load Module - The LIST load module contains the following source modules:

* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS35Ø11	BDGRD interface
HIS35731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 4

RAILROAD SUBSYSTEM

The railroad subsystem is also known as the HIS36 subsystem. The names of the source modules and load modules of the railroad subsystem have names of the format HIS36xxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the railroad subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining the programs. Use of the programs and subroutines is described in the other HIS Release 4.Ø manuals.

The RRXRDQ Subroutine

Source Module	Language	Function
HIS36ØØØ	Assembler	RRXRDQ subroutine
HIS36ØØ1	Assembler	RRXRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS36ØØØ	RRXRDQE	HIS.REL4PTØ	RRXRDQ	RRXRDQ subroutine
RRXRDQ	---	HIS.SUBRTN4	--	RRXRDQ interface

The HIS36ØØØ Source Module - This source module is the RRXRDQ subroutine. It is designed as a dynamic subroutine - one that is loaded into core when needed rather than link-edited with the calling program. The source module is stored only in the HIS36ØØØ load module so that only one link-edit is needed if the source module is altered. This source module has no external references.

The HIS36ØØ1 Source Module - This source module is the RRXRDQ interface. It is link-edited with programs that call RRXRDQ. When called, it loads the RRXRDQ subroutine into core and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS36ØØØ Load Module - This load module contains the HIS36ØØØ source module (RRXRDQ subroutine).

The RRXRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS36ØØ1 source module.

The RRXINB Subroutine

Source Module	Language	Function
HIS36ØØ2	Assembler	RRXINB subroutine

The HIS36ØØ2 Source Module - This source module is the RRXINB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The RRXRWB Subroutine

Source Module	Language	Function
HIS36ØØ3	Assembler	RRXRWB subroutine

The HIS36ØØ3 Source Module - This source module is the RRXRWB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The RRXRD Subroutine

Source Module	Language	Function
HIS36Ø1Ø	Assembler	RRXRD subroutine
HIS36Ø11	Assembler	RRXRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS36Ø1Ø	RRXRDQE	HIS.REL4PTØ	RRXRD	RRXRD subroutine
RRXRD	--	HIS.SUBRTN4	---	RRXRD interface

The HIS36Ø1Ø Source Module - This source module is the RRXRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program. The source module resides in only one load module so that only one link-edit is necessary if the source module is modified. The source module has the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine
SELTEST,SELTESTI - SELTEST subroutine
RRXRDQ,RRXRDQF,RRXRDQR,RRXRDQC - RRXRDQ subroutine

The HIS36Ø11 Source Module - This source module is the RRXRD interface. It is link-edited with programs that call RRXRD. When called, it loads the RRXRD subroutine into core and passes control to it. The source module contains the following external references:

FETCH - FETCH subroutine

The HIS36Ø1Ø Load Module - This load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS36ØØ1	RRXRDQ interface
HIS36Ø1Ø	RRXRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The RRXRD Load Module - This module is stored in the HIS.SUBRTN4 library. When link-editing, it is retrieved by automatic call. It contains the HIS36Ø11 source module.

The RRRWRQ Subroutine

Source Module	Language	Function
HIS36Ø22	Assembler	RRRWRQ subroutine

The HIS36Ø22 Source Module - This source module is the RRRWRQ subroutine. The source module contains no external references.

The CREATE-RRXREP Program

Source Module	Language	Function
HIS366ØØ	PL/I	CREATE-RRXREP mainline

Load Module	Entry Point	Library	Function
HIS366ØØ	PLISTART	HIS.REL4PTØ	CREATE-RRXREP

The HIS366ØØ Source Module - This source module is the mainline program of CREATE-RRXREP. It contains the following external references:

PRINT,DUMP - PRINT subroutine

RLGRDQ,RLGRDQI,RLGRDQL,RLGRDQT,RLGRDQC - RLGRDQ subroutine

TRMRDQ,TRMRDQC - TRMRDQ subroutine

RRXRDQ,RRXRDQI - RRXRDQ subroutine

RRRWRQ,RRRWRQC - RRRWRQ subroutine

ADT,ADTE,ADTC - ADT subroutine

INCNTY - INCNTY subroutine

The HIS366ØØ Load Module - The CREATE-RRXREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST interface
* HIS2Ø9Ø5	PRINTER control section
* HIS21142	INCNTY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS311Ø1	ADT subroutine
* HIS32ØØ1	TRMRDQ interface
* HIS36ØØ1	RRXRDQ interface
HIS36Ø22	RRRWRQ subroutine
HIS366ØØ	CREATE-RRXREP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The RRXREP-SORT-&-LIST Program

Source Module	Language	Function
HIS3662Ø	Assembler	RRXREP-SORT-&-LIST mainline

Load Module	Entry Point	Library	Function
HIS3662Ø	RFXSL	HIS.REL4PTØ	RRXREP-SORT-&-LIST

The HIS3662Ø Source Module - This source module is the mainline program of RRXREP-SORT-&-LIST. It contains the following external references:

PRINT,PRINTER,SETHDGS,SETINST - PRINT subroutine

The HIS3662Ø Load Module - The RRXREP-SORT-&-LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2Ø9Ø5	PRINTER control section
* HIS2ØØ58	GETLIST subroutine
HIS3662Ø	RRXREP-SORT-&-LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE Programs

Source Module	Language	Function
HIS367ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS367Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS367Ø2	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS367Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS3671Ø	PL/I	RRXRDC subroutine
HIS36711	PL/I	RRXCVT subroutine
HIS36712	PL/I	RRXEDIT subroutine

Load Module	Entry Point	Library	Function
HIS367ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS367Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS367Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS367Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE

The HIS367ØØ Source Module - This source module is the mainline program for the delete function. It contains the following external references:

SETINST,SETHDGS,PRINTA,PRINT - PRINT subroutine
RRXRWB,RRXRWBD,RRXRWBC - RRXRWB subroutine

The HIS367Ø1 Source Module - This source module is the mainline program for the insert function. It contains the following external references:

SETINST,SETHDGS,PRINT - PRINT subroutine
RRXINB,RRXINBC - RRXINB subroutine
RRXRDC,RRXRDCI - RRXRDC subroutine
RRXCVT - RRXCVT subroutine
RRXEDIT - RRXEDIT subroutine

The HIS367Ø2 Source Module - This source module is the mainline program for the new-key function. It contains the following external references:

SETINST,SETHDGS,PRINTA,PRINT - PRINT subroutine
RRXINB,RRXINBC,RRXINBN - RRXINB subroutine

The HIS367Ø3 Source Module - This source module is the mainline program for the rewrite function. It contains the following external references:

SETINST,SETPOSA,SETHDGS,PRINT - PRINT subroutine
REWRITE,REWRITF - REWRITE subroutine
RRXRDC,RRXRDCI - RRXRDC subroutine
RRXCVT,RRXCVTA - RRXCVT subroutine
RRXRWB,RRXRWBC,RRXRWBR - RRXRWB subroutine
RRXEDIT - RRXEDIT subroutine

The HIS3671Ø Source Module - RRXRDC reads railroad data cards for the update programs. The calling program first calls entry point RRXRDCI passing a char(8) ddname to use when opening the file. Subsequently the RRXRDC entry point is called passing a pointer. An A-B-C card sequence is read and returned as a "data string" pointed to by the pointer. The format of the data string is provided with the description of the RRXCVT subroutine in the publication Highway Information System Release 4.Ø Record Formats and Subroutines. The source module has the following external reference:

PRINT - PRINT subroutine

The HIS36711 Source Module - This source module is the RRXCVT subroutine. It contains the following external reference:

PRINT - PRINT subroutine

The HIS36712 Source Module - This source module is the RRXEDIT subroutine. It performs edit checks on a railroad record. When called, a pointer to a railroad record and a binary fixed(15) return code are passed. Return codes are:

Ø No errors or warnings detected
other The return code is the number of errors or warnings

The source module contains the following external references:

PRINT,PRINTA - PRINT subroutine
DATEDIT - DATEDIT subroutine

The HIS367ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS36ØØ3	RRXRWB subroutine
HIS367ØØ	UPDATE,FUNCTION=DELETE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS367Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS36ØØ2	RRXINB subroutine
HIS367Ø1	UPDATE,FUNCTION=INSERT mainline
HIS3671Ø	RRXRDC subroutine
HIS36711	RRXCVT subroutine
HIS36712	RRXEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS367Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS36ØØ2	RRXINB subroutine
HIS367Ø2	UPDATE,FUNCTION=NEW-KEY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS367Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS21Ø65	REWRITE subroutine
HIS36ØØ3	RRXRWB subroutine
HIS367Ø3	UPDATE,FUNCTION=REWRITE mainline
HIS3671Ø	RRXRDC subroutine
HIS36711	RRXCVT subroutine
HIS36712	RRXEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3672Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3672Ø	COPY	HIS.REL4PTØ	COPY

The HIS3672Ø Source Module - This source module is the COPY mainline. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3672Ø Load Module - The COPY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
HIS3672Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS36721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS36721	CREATE	HIS.REL4PTØ	CREATE

The HIS36721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS36721 Load Module - The CREATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø991	LOAD subroutine
HIS36721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS36722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS36722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS36722 Source Module - This source module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS36722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
* HIS2Ø991	LOAD subroutine
HIS36722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS36731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS36731	PLISTART	HIS.REL4PTØ	LIST

The HIS36731 Source Module - This source module is the mainline program of LIST. It contains the following external references:

SETPOS,SETHDGS,PRINT,SETINST,DUMP - PRINT subroutine

RRXRD,RRXRDF,RRXRDC - RRXRD subroutine

The HIS36731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
HIS36ØØ1	RRXRDQ interface
HIS36Ø11	RRXRD interface
HIS36731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 5

ROADLOG SUBSYSTEM

The roadlog subsystem is also known as the HIS3Ø subsystem. The names of all source modules and load modules have the format HIS3Øxxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the roadlog subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Use of the programs and subroutines are described in the other HIS Release 4.Ø manuals.

The RLGRDQ Subroutine

Source Module	Language	Function
HIS3ØØØØ	Assembler	RLGRDQ subroutine
HIS3ØØØ1	Assembler	RLGRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS3ØØØØ	RLGRDQE	HIS.REL4PTØ	RLGRDQ	RLGRDQ subroutine
RLGRDQ	---	HIS.SUBRTN4	--	RLGRDQ interface

The HIS3ØØØØ Source Module - HIS3ØØØØ is the RLGRDQ roadlog sequential-read subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). This source module resides in only one load module (HIS3ØØØØ) so that only one link-edit is needed when this source module is modified. The HIS3ØØØØ source module has these external references:

PRINT,PRINTER,DUMP - PRINT subroutine

The HIS3ØØØ1 Source Module - HIS3ØØØ1 is link-edited with programs that call RLGRDQ. The first time it is called during a run, it retrieves the subroutine using an access name of RLGRDQ. It then passes control to the proper entry point of the subroutine. During subsequent calls, it merely passes control to the subroutine. HIS3ØØØ1 has these external references:

FETCH - FETCH subroutine

The HIS3ØØØØ Load Module - This load module contains the dynamic RLGRDQ subroutine. It contains these source modules:

Source Module	Function	
* HIS2ØØ5Ø	PRINT interface	
* HIS2ØØ58	GETLIST subroutine	* Stored in HIS.SUBRTN4 for
* HIS2Ø9Ø5	PRINTER control section	inclusion by automatic call.
HIS3ØØØØ	RLGRDQ subroutine	

The RLGRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS3ØØØ1 source module (RLGRDQ interface).

The RLGINB Subroutine

Source Module	Language	Function
HIS3ØØØ2	Assembler	RLGINB subroutine

The HIS3ØØØ2 Source Module - HIS3ØØØ2 is the RLGINB subroutine. It must be link-edited with any program that uses it. Because of its limited usage, it is not stored in the HIS.SUBRTN4 library. If it is needed, it must be compiled and its object module used in the link-edit step. The source module has these external references:

PRINTER,PRINT,DUMP - PRINT subroutine
GETDATE - GETDATE subroutine

The RLGRWB Subroutine

Source Module	Language	Function
HIS3ØØØ3	Assembler	RLGRWB subroutine

The HIS3ØØØ3 Source Module - HIS3ØØØ3 is the RLGRWB subroutine. It must be link-edited with any program that uses it. The comments and external references are the same as the HIS3ØØØ2 source module above.

The RLGRD Subroutine

Source Module	Language	Function
HIS3ØØ1Ø	Assembler	RLGRD subroutine
HIS3ØØ11	Assembler	RLGRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS3ØØ1Ø	RLGRDE	HIS.REL4PTØ	RLGRD	RLGRD subroutine
RLGRD	--	HIS.SUBRTN4	---	RLGRD interface

The HIS3ØØ1Ø Source Module - HIS3ØØ1Ø is the RLGRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when called rather than link-edited with the calling program). The source module resides in only one load module so that only one link-edit is necessary if the source module is modified. The source module has these external references:

PRINTER,PRINT,DUMP - PRINT subroutine
SELTEST,SELTESTI,SELTESTC - SELTEST subroutine
SETINST - PRINT subroutine
RLGRDQ,RLGRDQF,RLGRDQR,RLGRDQT,RLGRDQC,RLGRDQX - RLGRDQ subroutine

The HIS3ØØ11 Source Module - HIS3ØØ11 is the RLGRD interface. It is link-edited with programs that call RLGRD. When called, it retrieves the RLGRD dynamic subroutine load module and passes control to it. It has these external references:

FETCH - FETCH subroutine

The HIS3ØØ1Ø Load Module - This load module contains the RLGRD dynamic subroutine. It contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS3ØØØ1	RLGRDQ interface
HIS3ØØ1Ø	RLGRD subroutine

* Stored in HIS.SUBRTN4 for inclusion by automatic call.

The RLGRD Load Module - This module is stored in the HIS.SUBRTN4 library. When link-editing, it is retrieved by automatic call. It contains the HIS3ØØ11 source module.

The COINKEY Subroutine

Source Module	Language	Function
HIS3Ø1ØØ	Assembler	COINKEY subroutine

Load Module	Library	Function
COINKEY	HIS.SUBRTN4	COINKEY subroutine

The HIS3Ø1ØØ Source Module - This source module is the COINKEY subroutine. It must be link-edited with any program that calls COINKEY. The source module has no external references.

The COINKEY Load Module - The COINKEY load module of the HIS.SUBRTN4 library enables COINKEY to be included by the automatic call facility of the link-editor. The load module contains the HIS3Ø1ØØ source module.

The KEYRLG Subroutine

Source Module	Language	Function
HIS3Ø1Ø1	PL/I	KEYRLG subroutine

Load Module	Library	Function
KEYRLG	HIS.SUBRTN4	KEYRLG subroutine

The HIS3Ø1Ø1 Source Module - This source module is the KEYRLG subroutine. It must be link-edited with any program that calls KEYRLG. The source module contains these external references:

PRINTER,PRINT,SETPOS,DUMP - PRINT subroutine
RLGRDQ,RLGRDQF,RLGRDQT,RLGRDQC - RLGRDQ subroutine

The KEYRLG Load Module - The KEYRLG load module of HIS.SUBRTN4 allows the link-editor to include KEYRLG by automatic call. The load module contains the source module HIS3Ø1Ø1.

The RLGCVT Subroutine

Source Module	Language	Function
HIS3Ø711	PL/I	RLGCVT subroutine

Load Module	Library	Function
RLGCVT	HIS.SUBRTN4	RLGCVT subroutine

The HIS3Ø711 Source Module - This source module is the RLGCVT subroutine. It must be link-edited with any program that calls RLGCVT. The source module contains these external references:

INCITY - INCITY subroutine
INPROJ - INPROJ subroutine

The RLGCVT Load Module - The RLGCVT load module of HIS.SUBRTN4 allows the link-editor to include RLGCVT by automatic call. The load module contains the source module HIS3Ø711.

The LIST-&-SUM Program

Source Module	Language	Function
HIS3Ø2ØØ	PL/I	LIST-&-SUM mainline

Load Module	Entry Point	Library	Function
HIS3Ø2ØØ	PLISTART	HIS.REL4PTØ	LIST-&-SUM

The HIS3Ø2ØØ Source Module - This source module is the mainline program of LIST-&-SUM. It has the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETHDGS,SETLINK - PRINT subroutine

INCITY - INCITY subroutine

INCNTY - INCNTY subroutine

COINKEY - COINKEY subroutine

RLGRD,RLGRDC,RLGRDF,RLGRDX,RLGRDT,RLGRDZ - RLGRD subroutine

CVTSURF - CVTSURF subroutine

The HIS3Ø2ØØ Load Module - The HIS3Ø2ØØ load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØ11	RLGRD interface
* HIS3Ø1ØØ	COINKEY subroutine
HIS3Ø2ØØ	LIST-&-SUM mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-ROUTES Program

Source Module	Language	Function
HIS3Ø2Ø1	PL/I	SUMMARY-BY-ROUTES mainline

Load Module	Entry Point	Library	Function
HIS3Ø2Ø1	PLISTART	HIS.REL4PTØ	SUMMARY-BY-ROUTES

The HIS3Ø2Ø1 Source Module - This source module is the mainline program of SUMMARY-BY-ROUTES. It has the following external references:

PRINTER,PRINT,SETINST,SETHDG,DUMP - PRINT subroutine

RLGRDQ,RLGRDQC,RLGRDQI,RLGRDQT - RLGRDQ subroutine

The HIS3Ø2Ø1 Load Module - The HIS3Ø2Ø1 load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS3ØØØ1	RLGRDQ interface
	HIS3Ø2Ø1	SUMMARY-BY-ROUTES mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SURF-TYPE Program

Source Module	Language	Function
HIS3Ø2Ø2	PL/I	SURF-TYPE mainline
HIS3Ø2Ø3	PL/I	SURF-TYPE SURTYPA
HIS3Ø2Ø4	PL/I	SURF-TYPE SURTYPB
HIS3Ø2Ø5	PL/I	SURF-TYPE SURTYPC

Load Module	Entry Point	Library	Function
HIS3Ø2Ø2	PLISTART	HIS.REL4PTØ	SURF-TYPE

The HIS3Ø2Ø2 Source Module - This source module is the mainline program of SURF-TYPE. It decides whether, for the options specified on the command, to use the SURF-TYPE algorithm of SURTYPA or that of SURTYPB, and calls the appropriate algorithm. The SURTYPA algorithm is used if SUMMARY=RTE-NO was specified on the command and if DATA=ILOOP was not specified. The SURTYPB algorithm is used in all other cases. The source module has these external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
SURTYPA - SURF-TYPE SURTYPA subroutine
SURTYPB - SURF-TYPE SURTYPB subroutine

The HIS3Ø2Ø3 Source Module - This source module is the SURTYPA subroutine of SURF-TYPE. It performs calculations for the surface type summary when producing a summary by route number except when producing the interstate loop summary by route number. It has these external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRD,RLGRDF,RLGRDC - RLGRD subroutine
INCITY - INCITY subroutine
CVTSURF - CVTSURF subroutine
SURTYPC - SURF-TYPE SURTYPC subroutine

When SURTYPA is called, the following arguments are passed:

1. Urban indicator - char(1):
   - U MILEAGE=URBAN
   - A MILEAGE=ALL
   - blank No MILEAGE parameter
2. System indicator - char(1) - From position 8 of instruction
3. Starting key - char(15) - From startkey portion of DATA parameter
4. Ending key - char(15) - From endkey portion of DATA parameter

The HIS3Ø2Ø4 Source Module - This source module is the SURTYPB subroutine of SURF-TYPE. It performs calculations for the surface type summaries except in the cases where SURTYPA performs the calculations. The source module has the external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRD,RLGRDF,RLGRDX,RLGRDC - RLGRD subroutine
CVTPROJ - CVTPROJ subroutine
INCITY - INCITY subroutine
COINKEY - COINKEY subroutine
CVTSURF - CVTSURF subroutine
SURTYPC - SURF-TYPE SURTYPC subroutine

When SURTYPB is called, the following arguments are passed:

1. Summary number - binary fixed(15):

1	SUMMARY=RTE-NO
2	SUMMARY=PROJ-#
3	SUMMARY=COUNTY
4	SUMMARY=CITIES
5	SUMMARY=YR-BLT
6	SUMMARY=SUR-WD
7	SUMMARY=YR-IMP

2-5. Like arguments 1-4 of SURTYPA.

The HIS3Ø2Ø5 Source Module - This source module performs the print-out of values computed by SURTYPA and SURTYPB. It contains the following external references:

PRINTER,PRINT,SETPOSA - PRINT subroutine

When SURTYPC is called, a char(16Ø) variable is passed. The first 2Ø characters contain the row heading. The remainder contains an (9,2) array of pic'zzzzvzzz' values. The elements in (*,1) are values for a rural line. The elements in (*,2) are values for a municipal line. A line is printed for each if the total figure is non-zero. If both lines are non-zero, a total line is computed and printed.

The HIS3Ø2Ø2 Load Module - The SURF-TYPE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS21Ø32	INPROJ subroutine
* HIS21Ø33	CVTPROJ subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØ11	RLGRD interface
* HIS3Ø1ØØ	COINKEY subroutine
HIS3Ø2Ø2	SURF-TYPE mainline
HIS3Ø2Ø3	SURF-TYPE SURTYPA
HIS3Ø2Ø4	SURF-TYPE SURTYPB
HIS3Ø2Ø5	SURF-TYPE SURTYPC

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-LOCATION Program

Source Module	Language	Function
HIS3Ø2Ø6	PL/I	SUMMARY-BY-LOCATION mainline
HIS3Ø2Ø7	PL/I	SUMMARY-BY-LOCATION SUMLOCI
HIS3Ø2Ø8	PL/I	SUMMARY-BY-LOCATION SUMLOCC
HIS3Ø2Ø9	PL/I	SUMMARY-BY-LOCATION SUMLOCS

Load Module	Entry Point	Library	Function
HIS3Ø2Ø6	PLISTART	HIS.REL4PTØ	SUMMARY-BY-LOCATION

The HIS3Ø2Ø6 Source Module - This source module is the mainline program of SUMMARY-BY-LOCATION. It determines which of the three slave programs to call for the specified DATA parameter. SUMLOCI is called for DATA=INTERSTATE. SUMLOCC is called for DATA=INTERSTATE+PRIMARY. SUMLOCS is called for DATA=SECONDARY. The source module contains these external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

SUMLOCI,SUMLOCC,SUMLOCS - SUMMARY-BY-LOCATION subroutines

The HIS3Ø2Ø7 Source Module - This module is called by the SUMMARY-BY-LOCATION mainline when DATA=INTERSTATE is specified. No arguments are passed to SUMLOCI. It contains the following external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQT,RLGRDQC - RLGRDQ subroutine

The HIS3Ø2Ø8 Source Module - This module is called by the SUMMARY-BY-LOCATION mainline when DATA=INTERSTATE+PRIMARY is specified. No arguments are passed to SUMLOCC. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQP,RLGRDQX,RLGRDQC - RLGRDQ subroutine
INCITY - INCITY subroutine
COINKEY - COINKEY subroutine

The HIS3Ø2Ø9 Source Module - SUMLOCS is called by the SUMMARY-BY-LOCATION mainline when DATA=SECONDARY is specified. No arguments are passed. It contains the following external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQC - RLGRDQ subroutine

The HIS3Ø2Ø6 Load Module - The SUMMARY-BY-LOCATION load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21142	INCITY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS3Ø1ØØ	COINKEY subroutine
HIS3Ø2Ø6	SUMMARY-BY-LOCATION mainline
HIS3Ø2Ø7	SUMMARY-BY-LOCATION SUMLOCI
HIS3Ø2Ø8	SUMMARY-BY-LOCATION SUMLOCC
HIS3Ø2Ø9	SUMMARY-BY-LOCATION SUMLOCS

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The FORHWY-SUMMARY Program

Source Module	Language	Function
HIS3Ø21Ø	PL/I	FORHWY-SUMMARY mainline
HIS3Ø211	PL/I	FORHWY-SUMMARY FORHWYL
HIS3Ø212	PL/I	FORHWY-SUMMARY FORHWYS

Load Module	Entry Point	Library	Function
HIS3Ø21Ø	PLISTART	HIS.REL4PTØ	FORHWY-SUMMARY

The HIS3Ø21Ø Source Module - This source module is the FORHWY-SUMMARY mainline program. It determines whether to call FORHWYL or FORHWYS. FORHWYL is called if FH-SUMMARY=LOCATION is specified. FORHWYS is called if FH-SUMMARY=SURF-TYPE is specified. It has these external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
FORHWYL,FORHWYS - FORHWY-SUMMARY subroutines

The HIS3Ø211 Source Module - FORHWYL is called by the FORHWY-SUMMARY mainline when FH-SUMMARY=LOCATION is specified. No arguments are passed. FORHWYL contains these external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQC - RLGRDQ subroutine

The HIS3Ø212 Source Module - FORHWYS is called by the FORHWY-SUMMARY mainline when FH-SUMMARY-SURF-TYPE is specified. No arguments are passed. FORHWYS contains these external references:

PRINTER,PRINT,SETHDG - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQC - RLGRDQ subroutine
CVTSURF - CVTSURF subroutine

The HIS3Ø21Ø Load Module - The FORHWY-SUMMARY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS3ØØØ1	RLGRDQ interface
HIS3Ø21Ø	FORHWY-SUMMARY mainline
HIS3Ø211	FORHWY-SUMMARY FORHWYL
HIS3Ø212	FORHWY-SUMMARY FORHWYS

* Stored in HIS.SUBRTN4 for inclusion by automatic call.

The STATE-MILEAGE-5Ø2 Program

Source Module	Language	Function
HIS3Ø3ØØ	PL/I	STATE-MILEAGE-5Ø2 mainline

Load Module	Entry Point	Library	Function
HIS3Ø3ØØ	PLISTART	HIS.REL4PTØ	STATE-MILEAGE-5Ø2

The HIS3Ø3ØØ Source Module - This source module is the mainline program of STATE-MILEAGE-5Ø2. It has these external references:

PRINTER,PRINT,SETHDG,SETINST - PRINT subroutine

SETHDGS - PRINT subroutine

RLGRD,RLGRDF,RLGRDT,RLGRDC - RLGRD subroutine

INCITY - INCITY subroutine

The HIS3Ø3ØØ Load Module - The STATE-MILEAGE-5Ø2 load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS3ØØ11	RLGRD interface
HIS3Ø3ØØ	STATE-MILEAGE-5Ø2 mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call

The STATE-MILEAGE-5Ø5 Program

Source Module	Language	Function
HIS3Ø3Ø1	PL/I	STATE-MILEAGE-5Ø5 mainline

Load Module	Entry Point	Library	Function
HIS3Ø3Ø1	PLISTART	HIS.REL4PTØ	STATE-MILEAGE-5Ø5

The HIS3Ø3Ø1 Source Module - This source module is the mainline program of STATE-MILEAGE-5Ø5. It has the following external references:

PRINTER,PRINT,SETPOS,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine

RLGRD,RLGRDF,RLGRDT,RLGRDC - RLGRD subroutine

TRFRDQ,TRFRDQI,TRFRDQC - TRFRDQ subroutine

INCITY - INCITY subroutine

The HIS3Ø3Ø1 Load Module - The STATE-MILEAGE-5Ø5 load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine

	Source Module	Function
*	HIS21Ø12	INCITY subroutine
*	HIS3ØØ11	RLGRD interface
	HIS3Ø3Ø1	STATE-MILEAGE-5Ø5 mainline
*	HIS31ØØ1	TRFRDQ interface

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The STATE-MILEAGE-5Ø6 Program

Source Module	Language	Function
HIS3Ø3Ø2	PL/I	STATE-MILEAGE-5Ø6 mainline

Load Module	Entry Point	Library	Function
HIS3Ø3Ø2	PLISTART	HIS.REL4PTØ	STATE-MILEAGE-5Ø6

The HIS3Ø3Ø2 Source Module - This source module is the mainline program of STATE-MILEAGE-5Ø6. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
RLGRD,RLGRDF,RLGRDT,RLGRDC - RLGRD subroutine
TRFRDQI,TRFRDQC,TRFRDQ - TRFRDQ subroutine
INCITY - INCITY subroutine

The HIS3Ø3Ø2 Load Module - The STATE-MILEAGE-5Ø6 load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS21Ø12	INCITY subroutine
*	HIS3ØØ11	RLGRD interface
	HIS3Ø3Ø2	STATE-MILEAGE-5Ø6 mainline
*	HIS31ØØ1	TRFRDQ interface

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE and EDIT Programs

Source Module	Language	Function
HIS3Ø7ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS3Ø7Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS3Ø7Ø2	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS3Ø7Ø3	PL/I	UPDATE,FUNCTION=REWRITE
HIS3Ø71Ø	PL/I	UPDATE RLGRDC
HIS3Ø712	PL/I	UPDATE and EDIT RLGEDIT
HIS3Ø735	PL/I	EDIT mainline

Load Module	Entry Point	Library	Function
HIS3Ø7ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS3Ø7Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS3Ø7Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS3Ø7Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE
HIS3Ø735	PLISTART	HIS.REL4PTØ	EDIT

The HIS3Ø7ØØ Source Module - This source module is the mainline program for UPDATE,FUNCTION=DELETE. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine

RLGRWB,RLGRWBD,RLGRWBC - RLGRWB subroutine

DUMPDD - DUMPDD subroutine

The HIS3Ø7Ø1 Source Module - This source module is the mainline program for UPDATE,FUNCTION=INSERT. It contains the following external references:

PRINTER,PRINT,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine

RLGINB,RLGINBC - RLGINB subroutine

RLGRDC,RLGRDCI - UPDATE RLGRDC subroutine

RLGCVT - RLGCVT subroutine

RLGEDIT,RLGEDC - UPDATE and EDIT RLGEDIT subroutine

The HIS3Ø7Ø2 Source Module - This source module is the mainline program for UPDATE,FUNCTION=NEW-KEY. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
RLGINB,RLGINBN,RLGINBC - RLGINB subroutine
DUMPDD - DUMPDD subroutine

The HIS3Ø7Ø3 Source Module - This source module is the mainline program for UPDATE,FUNCTION=REWRITE. It contains the following external references:

PRINTER,PRINT,SETPOS,SETPOSA,SETHDGS,SETINST,DUMP - PRINT subroutine
RLGRDC,RLGRDCI - UPDATE RLGRDC subroutine
RLGCVT,RLGCVTA - RLGCVT subroutine
REWRITE,REWRITF - REWRITE subroutine
RLGEDIT,RLGEDC - UPDATE and EDIT RLGEDIT subroutine
RLGRWB,RLGRWBR,RLGRWBC - RLGRWB subroutine

The HIS3Ø71Ø Source Module - RLGRDC reads roadlog data cards for the update program. An A-B-C card sequence is read and returned as a "data string" (see the description of RLGCVT in the publication Highway Information System Release 4.Ø - Record Formats and Subroutines for the format of a data string). RLGRDC contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine
DUMPDD - DUMPDD subroutine

The HIS3Ø712 Source Module - RLGEDIT performs data edit checks on a roadlog data string. It is called by both the update and edit programs. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETINST,DUMP - PRINT subroutine
POINTB,POINTBO,POINTBK,POINTBC - POINTB subroutine
GETDATE - GETDATE subroutine
DATEDIT - DATEDIT subroutine
INPROJ - INPROJ subroutine
INCITY - INCITY subroutine
CVTSURF - CVTSURF subroutine
CHECKDD - CHECKDD subroutine

The HIS3Ø735 Source Module - This source module is the mainline program of EDIT. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOSA,SETHDGS,SETINST,DUMP - PRINT subroutine

RLGRD,RLGRDF,RLGRDC - RLGRD subroutine

RLGCVT,RLGCVTA - RLGCVT subroutine

RLGEDIT,RLGEDC - RLGEDIT subroutine

The HIS3Ø7ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
HIS3ØØØ3	RLGRWB subroutine
HIS3Ø7ØØ	UPDATE,FUNCTION=DELETE mainline

* Stored in HIS.SUBRTN4 for inclusion by automatic call.

The HIS3Ø7Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS21Ø12	INCITY subroutine
* HIS21Ø32	INPROJ subroutine
* HIS21Ø42	CVTSURF subroutine
HIS3ØØØ2	RLGINB subroutine
HIS3Ø7Ø1	UPDATE,FUNCTION=INSERT mainline
HIS3Ø71Ø	RLGRDC subroutine
* HIS3Ø711	RLGCVT subroutine
HIS3Ø712	RLGEDIT subroutine
* HIS32Ø23	POINTB interface

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS3Ø7Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
	HIS3ØØØ2	RLGINB subroutine
	HIS3Ø7Ø2	UPDATE,FUNCTION=NEW-KEY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS3Ø7Ø3 Load Module - The UPDATE,FUNCTION=REWRITE Load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ56	CHECKDD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS21Ø12	INCITY subroutine
*	HIS21Ø32	INPROJ subroutine
*	HIS21Ø42	CVTSURF subroutine
*	HIS21Ø65	REWRITE subroutine
	HIS3ØØØ3	RLGRWB subroutine
	HIS3Ø7Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS3Ø71Ø	RLGRDC subroutine
*	HIS3Ø711	RLGCVT subroutine
	HIS3Ø712	RLGEDIT subroutine
*	HIS32Ø23	POINTB interface

* Stored in HIS.SUBRTN4 for inclusion by automatic call.

The HIS3Ø735 Load Module - The EDIT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS21Ø12	INCITY subroutine
* HIS21Ø32	INPROJ subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS3ØØ11	RLGRD interface
HIS3Ø712	RLGEDIT subroutine
HIS3Ø735	EDIT mainline
* HIS32Ø23	POINTB interface

* Stored in HIS.SUBRTN4 for inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3Ø72Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3Ø72Ø	COPY	HIS.REL4PTØ	COPY

The HIS3Ø72Ø Source Module - This source module is the mainline program of COPY. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3Ø72Ø Load Module - The COPY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
HIS3Ø72Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS3Ø721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS3Ø721	CREATE	HIS.REL4PTØ	CREATE

The HIS3Ø721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS3Ø721 Load Module - The CREATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø991	LOAD subroutine
HIS3Ø721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS3Ø722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS3Ø722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS3Ø722 Source Module - This source module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS3Ø722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
* HIS2Ø991	LOAD subroutine
HIS3Ø722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The DUMP Program

Source Module	Language	Function
HIS3Ø73Ø	PL/I	DUMP mainline

Load Module	Entry Point	Library	Function
HIS3Ø73Ø	PLISTART	HIS.REL4PTØ	DUMP

The HIS3Ø73Ø Source Module - This source module is the mainline program of DUMP. It contains the following external references:

PRINTER,PRINT,PRINTA,SETNEW,SETHDG,SETINST,DUMP - PRINT subroutine

RLGRD,RLGRDF,RLGRDC - RLGRD subroutine

RLGCVT,RLGCVTA - RLGCVT subroutine

The HIS3Ø73Ø Load Module - The DUMP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS21Ø32	INPROJ subroutine
* HIS3ØØ11	RLGRD interface
* HIS3Ø711	RLGCVT subroutine
HIS3Ø73Ø	DUMP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS3Ø731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS3Ø731	PLISTART	HIS.REL4PTØ	LIST

The HIS3Ø731 Source Module - This source module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,SETNEW,SETHDG,SETINST,DUMP - PRINT subroutine

RLGRD,RLGRDF,RLGRDC,RLGRDX - RLGRD subroutine

CVTSURF - CVTSURF subroutine

COINKEY - COINKEY subroutine

The HIS3Ø731 Load Module - This load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS3ØØ11	RLGRD interface
* HIS3Ø1ØØ	COINKEY subroutine
HIS3Ø731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-ILOOPS Program

Source Module	Language	Function
HIS3Ø732	PL/I	LIST-ILOOPS mainline

Load Module	Entry Point	Library	Function
HIS3Ø732	PLISTART	HIS.REL4PTØ	LIST-ILOOPS

The HIS3Ø732 Source Module - This source module is the mainline program of the LIST-ILOOPS program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,DUMP - PRINT subroutine

RLGRDQ,RLGRDQI,RLGRDQX,RLGRDQC - RLGRDQ subroutine

The HIS3Ø732 Load Module - The LIST-ILOOPS load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS21Ø12	INCITY subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS3Ø1ØØ	COINKEY subroutine
	HIS3Ø732	LIST-ILOOPS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 6

SKID SUBSYSTEM

The skid subsystem is also known as the HIS39 subsystem. The names of all source modules and load modules have the format HIS39xxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the skid subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Use of the programs and subroutines are described in the other HIS Release 4.Ø publications.

The SKDRDQ Subroutine

Source Module	Language	Function
HIS39ØØØ	Assembler	SKDRDQ subroutine
HIS39ØØ1	Assembler	SKDRDQ interface

Load Module	Library	Function
SKDRDQ	HIS.SUBRTN4	SKDRDQ interface

The HIS39ØØØ Source Module - This source module is the SKDRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). It resides in only one load module (see the SKDFILE Address List below). The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
SKDDCB - SKDDCB subroutine
SKDCMPR - SKDCMPR subroutine

The HIS39ØØ1 Source Module - This source module is the SKDRDQ interface. It is link-edited with programs that call SKDRDQ. When called, it loads the SKDRDQ subroutine into core for execution and passes control to it. It contains the following external references:

FETCH - FETCH subroutine

The SKDRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS39ØØ1 source module.

The SKDWRQ Subroutine

Source Module	Language	Function
HIS39ØØ2	Assembler	SKDWRQ subroutine
HIS39ØØ3	Assembler	SKDWRQ interface

Load Module	Library	Function
SKDWRQ	HIS.SUBRTN4	SKDWRQ interface

The HIS39ØØ2 Source Module - This source module is the SKDWRQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). It resides in only one load module so that only one link-edit is needed when the source module is modified (see The SKDFILE Address List below). The source module contains the following external references:

PRINTER,PRINT - PRINT subroutine
SKDDCB - SKDDCB subroutine
SKDCMPR - SKDCMPR subroutine

The HIS39ØØ3 Source Module - This source module is the SKDWRQ interface. It is link-edited with programs that call SKDWRQ. When called, it loads the SKDWRQ subroutine into core for execution and passes control to it. It contains the following external reference:

FETCH - FETCH subroutine

The SKDWRQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS39ØØ3 source module.

The SKDUPD Subroutine

Source Module	Language	Function
HIS39ØØ4	Assembler	SKDUPD subroutine
HIS39ØØ5	Assembler	SKDUPD interface

Load Module	Library	Function
SKDUPD	HIS.SUBRTN4	SKDUPD interface

The HIS39ØØ4 Source Module - This source module is the SKDUPD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). It resides in only one load module so that only one link-edit is needed when the source module is modified (see The SKDFILE Address List below). The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
SKDDCB - SKDDCB subroutine
SKDCMPR - SKDCMPR subroutine
GETDATE - GETDATE subroutine

The HIS39ØØ5 Source Module - This source module is the SKDUPD interface. It is link-edited with programs that call SKDUPD. When called, it loads the SKDUPD subroutine into core and passes control to it. It contains the following external reference:

FETCH - FETCH subroutine

The SKDUPD Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS39ØØ5 source module.

The SKDCMPR Subroutine

Source Module	Language	Function
HIS39ØØ6	Assembler	SKDCMPR subroutine

The HIS39ØØ6 Source Module - This source module is the SKDCMPR subroutine. It has no external references.

The Skid Compressed Record Format

Columns	Length	Format	Data Element
1	1	char(1)	Delete byte
2-18	17		Key
19	1	char(1)	Surface type
2Ø	1	char(1)	Curvature
21	1	char(1)	Grade
22	1	char(1)	Location
23	1	char(1)	Surface repair
24-61	38	char(38)	Comments
62	1	fixed(1)	Surface texture
63	1	fixed(1)	Foreign matter
64-65	2	fixed(2)	Pavement temperature
66	1	* fixed(2)	Speed
67	1	* fixed(2)	Skid number
68	1	* fixed(2)	Date of update - month
69	1	* fixed(2)	Date of update - day
7Ø	1	* fixed(2)	Date of update - year

* Stored without sign and leading zero.

Key Format - Rural

Columns	Length	Format	Data Element
2	1	char(1)	Route system
3-9	7	fixed(12)	Route number and milepoint
1Ø	1	char(1)	Direction
11	1		Blank
12	1	char(1)	Lane
13	1	char(1)	Wheel
14	1	* fixed(2)	Date - month
15	1	* fixed(2)	Date - day
16	1	* fixed(2)	Date - year
17-18	2	* fixed(4)	Sequence number

* Stored without sign and leading zero.

Key Format - Municipal

Columns	Length	Format	Data Element
2	1	char(1)	"M"
3-8	6	fixed(11)	City number, x-coordinate, y-coordinate
9	1	char(1)	Direction
10-11	2	fixed(3)	Distance from intersection
12-18	7		Same as 12-18 of rural key

The SKDDCB Subroutine

Source Module	Language	Function
HIS39007	Assembler	SKDDCB subroutine

The HIS39007 Source Module - This source module is the SKDDCB subroutine. It has the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine

The SKDFILE Address List

Source Module	Language	Function
HIS39008	Assembler	SKDFILE address list

Load Module	Entry Point	Library	Access Name	Function
HIS39008	SKDFILE	HIS.REL4PT0	SKDFILE	Skid dynamic subroutines

The HIS39008 Source Module - This source module is an address list for use by interfaces to dynamic skid subroutines. It contains the following external references:

SKDRDQE - Address list of SKDRDQ subroutine
SKDWRQE - Address list of SKDWRQ subroutine
SKDUPDE - Address list of SKDUPD subroutine
SKDCMPR - SKDCMPR subroutine
SKDDCB - SKDDCB subroutine

The HIS39ØØ8 Load Module - The SKDFILE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS39ØØØ	SKDRDQ subroutine
HIS39ØØ2	SKDWRQ subroutine
HIS39ØØ4	SKDUPD subroutine
HIS39ØØ6	SKDCMPR subroutine
HIS39ØØ7	SKDDCB subroutine
HIS39ØØ8	SKDFILE address list

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SKDRD Subroutine

Source Module	Language	Function
HIS39Ø1Ø	Assembler	SKDRD subroutine
HIS39Ø11	Assembler	SKDRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS39Ø1Ø	SKDRDE	HIS.REL4PTØ	SKDRD	SKDRD subroutine
SKDRD	--	HIS.SUBRTN4	---	SKDRD interface

The HIS39Ø1Ø Source Module - This source module is the SKDRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It is stored only in the HIS39Ø1Ø load module so that only one link-edit is necessary when the source module is modified. The source module has these external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

SKDRDQ,SKDRDQF,SKDRDQR,SKDRDQC - SKDRDQ subroutine

RLGRDQ,RLGRDQF,RLGRDQT,RLGRDQL,RLGRDQC - RLGRDQ subroutine

CVTCITY - CVTCITY subroutine

The HIS39Ø11 Source Module - This source module is the SKDRD interface. It is linked with programs that call SKDRD. When called, it loads the SKDRD subroutine and passes control to it. It contains the following external reference:

FETCH - FETCH subroutine

The HIS39Ø1Ø Load Module - The SKDRD load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS21Ø13	CVTCITY subroutine
* HIS22ØØ1	SELTEST interface
* HIS3ØØØ1	RLGRDQ interface
* HIS39ØØ1	SKDRDQ interface
HIS39Ø1Ø	SKDRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SKDRD Load Module - This load module is stored in HIS.SUBRTN4 library. When link-editing, the module is retrieved by automatic call. It contains the HIS39Ø11 source module.

The SKDOPT Subroutine

Source Module	Language	Function
HIS391ØØ	PL/I	SKDOPT subroutine

Load Module	Library	Function
SKDOPT	HIS.SUBRTN4	SKDOPT subroutine

The HIS391ØØ Source Module - This source module is the SKDOPT subroutine. It contains the following external references:

PRINTER,PRINT,SETPOS,SETNEW,SETINST,DUMP - PRINT subroutine

The SKDOPT Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, the module is retrieved by automatic call. It contains the HIS391ØØ source module.

The SKDCVT Subroutine

Source Module	Language	Function
HIS39711	PL/I	SKDCVT subroutine

Load Module	Library	Function
SKDCVT	HIS.SUBRTN4	SKDCVT subroutine

The HIS39711 Source Module - This source module is the SKDCVT subroutine. It contains no external references.

The SKDCVT Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, the module is retrieved by automatic call. It contains the HIS39711 source module.

The LOW-SKID-NUMBERS Program

Source Module	Language	Function
HIS392ØØ	PL/I	LOW-SKID-NUMBERS mainline

Load Module	Entry Point	Library	Function
HIS392ØØ	PLISTART	HIS.REL4PTØ	LOW-SKID-NUMBERS

The HIS392ØØ Source Module - This source module is the mainline program of LOW-SKID-NUMBERS. It contains the following external references:

PRINTER,PRINT,SETPOS,SETHDGS - PRINT subroutine

SKDRDF,SKDRD,SKDRDC - SKDRD subroutine

INCITY - INCITY subroutine

DATE4 - DATE4 subroutine

SKDOPT - SKDOPT subroutine

The HIS392ØØ Load Module - The LOW-SKID-NUMBERS load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø12	INCITY subroutine
* HIS39Ø11	SKDRD interface
* HIS391ØØ	SKDOPT subroutine
HIS392ØØ	LOW-SKID-NUMBERS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE, EDIT, AND SKID-LOAD Programs

Source Module	Language	Function
HIS397ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS3971	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS3972	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS3973	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS3978	PL/I	SKID-LOAD mainline
HIS3971Ø	PL/I	SKDRDC subroutine
HIS39712	PL/I	SKDEDIT subroutine
HIS39713	PL/I	SKDED1 subroutine
HIS39714	PL/I	SKDED2 subroutine
HIS39735	PL/I	EDIT mainline

Load Module	Entry Point	Library	Function
HIS397ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS3970l	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS3970Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS3970Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE
HIS3970Ø8	PLISTART	HIS.REL4PTØ	SKID-LOAD
HIS39735	PLISTART	HIS.REL4PTØ	EDIT

The HIS397ØØ Source Module - This source module is the mainline program of the update delete function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
SKDRDC - SKDRDC subroutine
SKDUPD,SKDUPDD,SKDUPDC - SKDUPD subroutine
DATE4 - DATE4 subroutine

The HIS3970l Source Module - This source module is the mainline program of the update insert function. It contains the following external references:

PRINTER,PRINTA,PRINT,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
SKDRDC - SKDRDC subroutine
SKDCVT - SKDCVT subroutine
SKDEDIT,SKDEDC - SKDEDIT subroutine
SKDUPD,SKDUPDI,SKDUPDC - SKDUPD subroutine
DATE4 - DATE4 subroutine

The HIS3970Ø2 Source Module - This source module is the mainline program of the update new-key function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
SKDRDC - SKDRDC subroutine
SKDCVT - SKDCVT subroutine
SKDEDIT,SKDEDC - SKDEDIT subroutine
SKDUPD,SKDUPDG,SKDUPDI,SKDUPDR,SKDUPDD,SKDUPDC - SKDUPD subroutine
DATE4 - DATE4 subroutine

The HIS397Ø3 Source Module - This source module is the mainline program of the update rewrite function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
SKDRDC - SKDRDC subroutine
SKDCVT - SKDCVT subroutine
SKDEDIT,SKDEDC - SKDEDIT subroutine
SKDUPD,SKDUPDG,SKDUPDR,SKDUPDC - SKDUPD subroutine
REWRITE,REWRITF - REWRITE subroutine
DATE4 - DATE4 subroutine

The HIS397Ø8 Source Module - This source module is the mainline program of the skid load program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDGS,SETINST,DUMP - PRINT subroutine
SKDRDC - SKDRDC subroutine
SKDCVT - SKDCVT subroutine
SKDEDIT,SKDEDC - SKDEDIT subroutine

The HIS3971Ø Source Module - This source module is the SKDRDC subroutine. It reads data cards for the mainline update and load programs. When called, a pointer and a binary fixed(15) variable are passed. The binary variable contains one of these values to indicate the calling program:

Ø Delete function
1 Insert function or load
2 New-key function
3 Rewrite function

A card is read and the passed pointer is set to the card's address. The source module has these external references:

PRINTER,PRINT,PRINTA,SETINST,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine

The HIS39712 Source Module - This source module is the SKDEDIT subroutine. When called, a pointer and a binary fixed(15) variable are passed. The pointer must contain the address of a skid data card read by SKDRDC. The return code indicates the outcome of the edits:

Ø	No warnings or severe errors
1	One or more warnings but no severe errors
2	One or more severe errors

SKDEDIT determines whether the card is a rural or a municipal card. If it is a rural card, SKDED1 is called. Otherwise, SKDED2 is called. The source module contains the following external references:

SKDED1,SKDED1C - SKDED1 subroutine
SKDED2,SKDED2C - SKDED2 subroutine

When entry point SKDEDC is called, SKDEDIT calls both SKDED1C and SKDED2C.

The HIS39713 Source Module - This source module is the SKDED1 subroutine, which performs edit checks for rural data cards. It has entry points SKDED1 and SKDED1C. SKDED1 is called to edit a card. SKDED1C is called upon termination. Calling sequences are identical to SKDEDIT. The source module contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETINST,DUMP - PRINT subroutine
RLGRDQ,RLGRDQF,RLGRDQX,RLGRDQC - RLGRDQ subroutine
POINTB,POINTBO,POINTBK,POINTBC - POINTB subroutine
DATEDIT - DATEDIT subroutine
GETDATE - GETDATE subroutine
TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The HIS39714 Source Module - This source module is the SKDED2 subroutine, which performs edit checks for municipal data cards. It has entry points SKDED2 and SKDED2c. Calling sequences are identical to SKDEDIT and SKDED1. The source module contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETINST,DUMP - PRINT subroutine

RLGRDQ,RLGRDQF,RLGRDQX,RLGRDQC - RLGRDQ subroutine

DATEDIT - DATEDIT subroutine

GETDATE - GETDATE subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The HIS39735 Source Module - This source module is the mainline procedure of the edit program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine

SKDRD,SKDRDF,SKDRDC - SKDRDC subroutine

SKDCVT - SKDCVT subroutine

SKDEDIT,SKDEDC - SKDEDIT subroutine

The HIS397ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS39ØØ5	SKDUPD interface
HIS397ØØ	UPDATE,FUNCTION=DELETE mainline
HIS3971Ø	SKDRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS397Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine

	Source Module	Function
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS32Ø23	POINTB interface
*	HIS39ØØ5	SKDUPD interface
	HIS397Ø1	UPDATE,FUNCTION=INSERT mainline
	HIS3971Ø	SKDRDC subroutine
*	HIS39711	SKDCVT subroutine
	HIS39712	SKDEDIT subroutine
	HIS39713	SKDED1 subroutine
	HIS39714	SKDED2 subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS397Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS32Ø23	POINTB interface
*	HIS39ØØ5	SKDUPD interface
	HIS397Ø2	UPDATE,FUNCTION=NEW-KEY mainline
	HIS3971Ø	SKDRDC subroutine
*	HIS39711	SKDCVT subroutine
	HIS39712	SKDEDIT subroutine
	HIS39713	SKDED1 subroutine
	HIS39714	SKDED2 subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS397Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS21Ø65	REWRITE subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS32Ø23	POINTB interface
*	HIS39ØØ5	SKDUPD interface
	HIS397Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS3971Ø	SKDRDC subroutine
*	HIS39711	SKDCVT subroutine
	HIS39712	SKDEDIT subroutine
	HIS39713	SKDED1 subroutine
	HIS39714	SKDED2 subroutine

* stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS397Ø8 Load Module - The SKID-LOAD load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS32Ø23	POINTB interface
*	HIS39ØØ5	SKDUPD interface
	HIS397Ø8	SKID-LOAD mainline
	HIS3971Ø	SKDRDC subroutine
*	HIS39711	SKDCVT subroutine
	HIS39712	SKDEDIT subroutine
	HIS39713	SKDED1 subroutine
	HIS39714	SKDED2 subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS39735 Load Module - The EDIT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS3ØØØ1	RLGRDQ interface
*	HIS32Ø23	POINTB interface
*	HIS39Ø11	SKDRD interface
*	HIS39711	SKDCVT subroutine
	HIS39712	SKDEDIT subroutine
	HIS39713	SKDED1 subroutine
	HIS39714	SKDED2 subroutine
	HIS39735	EDIT mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The Ramp Location Table - The ramp location table identifies the locations of rural ramps. The first record of the table is a header record which contains a count of the number of records in the table (not counting the header record) in columns 1-3. The remaining records each contain the key (route system, route number, and milepoint) of a ramp location. Information on maintaining the table is included in the chapter entitled "TABLES" in the publication Highway Information System Release 4.Ø - Record Formats and Subroutines.

The Rural Edit Table - The rural edit table contains information used by SKDED1 when performing edit checks. The table consists of 19 records. Each record has a 2Ø-character identification field in columns 1-2Ø, record-dependent information in columns 21-4Ø, and blanks in the remainder of the record. The 19 records are:

Record Number	Identification	Contents of Columns 21-4Ø
1	ROUTE-SYSTEM	Allowable route system codes
2	DIRECTION	Allowable direction codes
3	LANE-OF-TRAVEL	Allowable lane codes
4	WHEEL	Allowable wheel codes
5	SURFACE-TYPE	Allowable surface type codes
6	SURFACE-TEXTURE	Allowable surface texture codes
7	HOR-CURVE	Allowable horizontal curvature codes
8	GRADE	Allowable grade codes
9	FOREIGN-MATTER	Allowable foreign matter codes
1Ø	LOCATION-CODE	Allowable location codes
11	SURFACE-REPAIR	Allowable surface repair codes
12	LANE-OF-TRAVEL-RAMP	Allowable lane codes for ramps
13	SPEED	Upper and lower speed limits
14	SKID-NUMBER	Upper and lower skid numbers
15	PAVEMENT-TEMP	Upper and lower temperature limits
16	LOCATION-CODE-RAMP	Allowable location codes for ramps
17	ROADLOG-ROUTES	Roadlog cross-check switch
18	RAMP-LOCATIONS-TABLE	Ramp table cross-check switch
19	TRUE-MILEAGE	True mileage cross-check switch

Record Number	
1	This record contains a list of codes that can appear in the route system portion of the key. The codes are left-justified beginning in column 21. The first blank terminates the field.
2	This record contains a list of codes that can appear in the direction field. The codes are left-justified beginning in column 21. The first blank terminates the field. If a blank can be accepted, column 21 is blank and the other codes begin in column 22.
3	This record contains a list of codes that can appear in the lane of travel field for non-ramp records. It is prepared like record 2.
4	This record contains a list of codes that can appear in the wheel field. It is prepared like record 2.
5	This record contains a list of codes that can appear in the surface type field. It is prepared like record 2.
6	This record contains a list of codes that can appear in the surface texture field. It is prepared like record 2.
7	This record contains a list of codes that can appear in the horizontal curve field. It is prepared like record 2.
8	This record contains a list of codes that can appear in the grade field. It is prepared like record 2.

Record Number	
9	This record contains a list of codes that can appear in the foreign matter field. It is prepared like record 2.
1Ø	This record contains a list of location codes that can appear in the location field of non-ramp records. It is prepared like record 2.
11	This record contains a list of codes that can appear in the surface repair field. It is prepared like record 2.
12	This record contains a list of codes that can appear in the lane of travel field of ramp records. It is prepared like record 2.
13	This record contains the upper and lower limits of values in the speed field. The lower limit is coded in columns 21-22 and the upper limit is coded in columns 23-24.
14	This record contains the upper and lower limits of values in the skid number field. It is prepared like record 13.
15	This record contains the upper and lower limits of values in the temperature field. The lower limit is in columns 21-23 (with leading zeroes) and the upper limit is in columns 24-26.
16	This record contains a list of codes that can appear in the location field of ramp records. It is prepared like record 2.
17	This record controls access to the roadlog file. If the characters YES appear left-justified in columns 21-4Ø, the skid records will be edited against the roadlog file. If the characters NO appear, the roadlog editing is bypassed. Message SKD-MØØ3 is affected by this switch.
18	This record controls editing against the ramp location table. It is prepared like record 17. Message SKD-MØØ6 is affected by this switch.
19	This record controls editing against the true mileage file. It is prepared like record 17. Messages SKD-MØØ5 and SKD-MØØ7 are affected by this switch.

Information pertaining to maintenance of this table can be found in the chapter entitled "TABLES" in the publication Highway Information System Release 4.Ø - Record Formats and Subroutines.

The Municipal Edit Table - The municipal edit table contains information used by SKDED2 when performing edit checks. The format of the records is the same as in the rural edit table. The table contains the following 21 records:

Record Number	Identification	Contents of Columns 21-4Ø
1	ROUTE-SYSTEM	Allowable route system codes
2	DIRECTION	Allowable direction codes
3	LANE-OF-TRAVEL	Allowable lane codes
4	WHEEL	Allowable wheel codes
5	SURFACE-TYPE	Allowable surface type codes
6	SURFACE-TEXTURE	Allowable surface texture codes
7	HOR-CURVE	Allowable horizontal curvature codes
8	GRADE	Allowable grade codes
9	FOREIGN-MATTER	Allowable foreign matter codes
1Ø	LOCATION-CODE	Allowable location codes
11	SURFACE-REPAIR	Allowable surface repair codes
12	LANE-OF-TRAVEL-RAMP	Allowable lane codes in ramp records
13	SPEED	Allowable speed values
14	SKID-NUMBER	Allowable skid numbers
15	PAVEMENT-TEMP	Allowable pavement temperatures
16	LOCATION-CODE-RAMP	Allowable location codes in ramp records
17	CITY-NUMBER	Allowable city numbers
18	X-COORDINATE	Allowable x-coordinates
19	Y-COORDINATE	Allowable y-coordinates
2Ø	LOCATION-DIRECTION	Allowable location codes when distance from intersection i non-zero
21	ROADLOG-ROUTES	Roadlog cross-check switch

Record Number	
1-16	Same as corresponding record in rural edit table.
17	Code like record 15.
18-19	Lower limit in 21-24, upper limit in 25-28.
2Ø	Code like record 2.
21	Code like record 17 of rural table.

The REORGANIZE Program

Source Module	Language	Function
HIS39722	PL/I	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS39722	PLISTART	HIS.REL4PTØ	REORGANIZE

The HIS39722 Source Module - This source module is the REORGANIZE mainline. It contains the following external references:

PRINTER,PRINT,SETINST,SETHDGS,DUMP - PRINT subroutine

SKDRDQ,SKDRDQF,SKDRDQC - SKDRDQ subroutine

SKDWRQ,SKDWRQC - SKDWRQ subroutine

DUMPDD - DUMPDD subroutine

DATE4 - DATE4 subroutine

The HIS39722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS39ØØ1	SKDRDQ interface
* HIS39ØØ3	SKDWRQ interface
HIS39722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS39731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS39731	PLISTART	HIS.REL4PTØ	LIST

The HIS39731 Source Module - This source module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,SETNEW,SETHDGS,SETINST,DUMP - PRINT subroutine

SKDRDQ,SKDRDQF,SKDRDQX,SKDRDQC - SKDRDQ subroutine

SKDRD,SKDRDF,SKDRDC - SKDRD subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

INCITY - INCITY subroutine

DATE4 - DATE4 subroutine

SKDOPT - SKDOPT subroutine

DUMPDD - DUMPDD subroutine

The HIS39731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø12	INCITY subroutine
* HIS39ØØ1	SKDRDQ interface
* HIS39Ø11	SKDRD interface
* HIS391ØØ	SKDOPT subroutine
HIS39731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SKID-CARD-CONVERT Program

Source Module	Language	Function
HIS39799	PL/I	SKID-CARD-CONVERT mainline

Load Module	Entry Point	Library	Function
HIS39799	PLISTART	HIS.REL4PTØ	SKID-CARD-CONVERT

The HIS39799 Source Module - This source module is the SKID-CARD-CONVERT mainline. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine

DUMPDD - DUMPDD subroutine

The HIS39799 Load Module - The SKID-CARD-CONVERT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
HIS39799	SKID-CARD-CONVERT mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 7

SUFFICIENCY SUBSYSTEM

The sufficiency subsystem is also known as the HIS34 subsystem. The names of all source modules and load modules have the format HIS34xxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the sufficiency subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Use of the programs and subroutines are described in the other HIS release 4.Ø publications.

The SUFRDQ Subroutine

Source Module	Language	Function
HIS34ØØØ	Assembler	SUFRDQ subroutine
HIS34ØØ1	Assembler	SUFRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS34ØØØ	SUFRDQE	HIS.REL4PTØ	SUFRDQ	SUFRDQ subroutine
SUFRDQ	---	HIS.SUBRTN4	--	SUFRDQ interface

The HIS34ØØØ Source Module - This source module is the SUFRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The source module resides in only the HIS34ØØØ load module so that only one link-edit is needed when the source module is modified. The source module has the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS34ØØ1 Source Module - This source module is the SUFRDQ interface. It is linked with programs that call SUFRDQ. When called, it loads SUFRDQ into core and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS34ØØØ Load Module - This load module contains the dynamic SUFRDQ subroutine. It contains the following source modules:

Source Module	Function	
* HIS2ØØ5Ø	PRINT interface	* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.
* HIS2ØØ58	GETLIST subroutine	
* HIS2Ø9Ø5	PRINTER control section	
HIS34ØØØ	SUFRDQ subroutine	

The SUFRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS34ØØ1 source module.

The SUFINB Subroutine

Source Module	Language	Function
HIS34ØØ2	Assembler	SUFINB subroutine

The HIS34ØØ2 Source Module - This source module is the SUFINB subroutine. It must be linked with programs that use it. Because of its limited usage, it is not stored in the HIS.SUBRTN4 library. If it is needed, it must be compiled and its object module explicitly included. The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
GETDATE - GETDATE subroutine

The SUFRWB Subroutine

Source Module	Language	Function
HIS34ØØ3	Assembler	SUFRWB subroutine

The HIS34ØØ3 Source Module - This source module is the SUFRWB subroutine. See the HIS34ØØ2 source module above for external references and comments.

The SUFRD Subroutine

Source Module	Language	Function
HIS34Ø1Ø	Assembler	SUFRD subroutine
HIS34Ø11	Assembler	SUFRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS34Ø1Ø	SUFRDE	HIS.REL4PTØ	SUFRD	SUFRD subroutine
SUFRD	--	HIS.SUBRTN4	---	SUFRD interface

The HIS34Ø1Ø Source Module - This source module is the SUFRD subroutine. It is designed as a dynamic subroutine (one that is loaded when needed rather than link-edited with calling programs). It appears only in the HIS34Ø1Ø load module so that only one link-edit is needed when the source module is modified. The source module contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

SUFRDQ,SUFRDQF,SUFRDQR,SUFRDQC - SUFRDQ subroutine

The HIS34Ø11 Source Module - This source module is the SUFRD interface. It is link-edited with programs that call SUFRD. When called, the interface loads the SUFRD subroutine and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS34Ø1Ø Load Module - The SUFRD load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS34ØØ1	SUFRDQ interface
HIS34Ø1Ø	SUFRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUFRD Load Module - This module is stored in the HIS.SUBRTN4 library. When link-editing, it is retrieved by automatic call. It contains the HIS34Ø11 source module.

The SFRRDQ Subroutine

Source Module	Language	Function
HIS34Ø2Ø	Assembler	SFRRDQ subroutine
HIS34Ø21	Assembler	SFRRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS34Ø2Ø	SFRRDQE	HIS.REL4PTØ	SFRRDQ	SFRRDQ subroutine
SFRRDQ	---	HIS.SUBRTN4	--	SFRRDQ interface

The HIS34Ø2Ø Source Module - Similar to HIS34ØØØ source module above.

The HIS34Ø21 Source Module - Similar to HIS34ØØ1 source module above.

The HIS34Ø2Ø Load Module - The dynamic SFRRDQ load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS34Ø2Ø	SFRRDQ subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SFRRDQ Load Module - This load module is stored in HIS.SUBRTN4 to allow inclusion by automatic call. It contains the HIS34Ø21 source module.

The SFRWRQ Subroutine

Source Module	Language	Function
HIS34Ø22	Assembler	SFRWRQ subroutine

The HIS34Ø22 Source Module - This source module is the SFRWRQ subroutine. It contains no external references. It must be link-edited with any program that calls it. It is not stored in HIS.SUBRTN4.

The PRNTSFR Subroutine

Source Module	Language	Function
HIS341ØØ	PL/I	PRNTSFR subroutine

Load Module	Library	Function
PRNTSFR	HIS.SUBRTN4	PRNTSFR subroutine

The HIS341ØØ Source Module - This source module is the PRNTSFR subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The PRNTSFR Load Module - This load module is stored in the HIS.SUBRTN4 library. It allow inclusion of the PRNTSFR subroutine by automatic call. It contains the HIS341ØØ source module.

The SREPSRT Subroutine

Source Module	Language	Function
HIS341Ø1	PL/I	SREPSRT subroutine

Load Module	Library	Function
SREPSRT	HIS.SUBRTN4	SREPSRT subroutine

The HIS341Ø1 Source Module - This source module is the SREPSRT subroutine. It contains the following external references:

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine
PRINTER,PRINT,DUMP - PRINT subroutine
PLISRTA - PL/I sort routines

The SREPSRT Load Module - This load module is stored in the HIS.SUBRTN4 library. It allows inclusion of the SREPSRT subroutine by automatic call. It contains the HIS341Ø1 source module.

The SUFCVT Subroutine

Source Module	Language	Function
HIS34711	PL/I	SUFCVT subroutine

Load Module	Library	Function
SUFCVT	HIS.SUBRTN4	SUFCVT subroutine

The HIS34711 Source Module - This source module is the SUFCVT subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The SUFCVT Load Module - This load module is stored in HIS.SUBRTN4. It allows inclusion of SUFCVT by automatic call. It contains the HIS34711 source module.

The LIST-BY-SECTION Program

Source Module	Language	Function
HIS342ØØ	PL/I	LIST-BY-SECTION mainline

Load Module	Entry Point	Library	Function
HIS342ØØ	PLISTART	HIS.REL4PTØ	LIST-BY-SECTION

The HIS342ØØ Source Module - This source module is the LIST-BY-SECTION mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA - PRINT subroutine

SETHDGS,SETNEW,SETLINK,SETINST,DUMP - PRINT subroutine

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

INCNTY - INCNTY subroutine

INCITY - INCITY subroutine

RLGRDQ,RLGRDQI,RLGRDQT,RLGRDQX,RLGRDQC - RLGRDQ subroutine

The HIS342ØØ Load Module - The LIST-BY-SECTION load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø12	INCITY subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS34Ø21	SFRRDQ interface
HIS342ØØ	LIST-BY-SECTION mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-BY-DISTRICT Program

Source Module	Language	Function
HIS342Ø1	PL/I	LIST-BY-DISTRICT mainline

Load Module	Entry Point	Library	Function
HIS342Ø1	PLISTART	HIS.REL4PTØ	LIST-BY-DISTRICT

The HIS342Ø1 Source Module - This source module is the LIST-BY-DISTRICT mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA - PRINT subroutine

SETINST,SETHDGS,SETNEW,SETLINK,DUMP - PRINT subroutine

SREPSRT - SREPSRT subroutine

INCNTY - INCNTY subroutine

The HIS342Ø1 Load Module - The LIST-BY-DISTRICT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21142	INCNTY subroutine
* HIS34Ø21	SFRRDQ interface
* HIS341Ø1	SREPSRT subroutine
HIS342Ø1	LIST-BY-DISTRICT mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-BY-RATING Program

Source Module	Language	Function
HIS342Ø2	PL/I	LIST-BY-RATING mainline

Load Module	Entry Point	Library	Function
HIS342Ø2	PLISTART	HIS.REL4PTØ	LIST-BY-RATING

The HIS342Ø2 Source Module - This source module is the LIST-BY-RATING mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA - PRINT subroutine

SETINST,SETHDGS,SETNEW,SETLINK,DUMP - PRINT subroutine

SREPSRT - SREPSRT subroutine

INCNTY - INCNTY subroutine

The HIS342Ø2 Load Module - The LIST-BY-RATING load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS21142	INCNTY subroutine
*	HIS34Ø21	SFRRDQ interface
*	HIS341Ø1	SREPSRT subroutine
	HIS342Ø2	LIST-BY-RATING mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The MAP-TABLES Program

Source Module	Language	Function
HIS342Ø3	PL/I	MAP-TABLES mainline

Load Module	Entry Point	Library	Function
HIS342Ø3	PLISTART	HIS.REL4PTØ	MAP-TABLES

The HIS342Ø3 Source Module - This source module is the map-tables mainline program. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETINST,SETDD,DUMP - PRINT subroutine

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

The HIS342Ø3 Load Module - The MAP-TABLES load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ51	FETCH interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS34Ø21	SFRRDQ interface
	HIS342Ø3	MAP-TABLES mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The RATING-BY-DISTRICT Program

Source Module	Language	Function
HIS342Ø4	PL/I	RATING-BY-DISTRICT mainline

Load Module	Entry Point	Library	Function
HIS342Ø4	PLISTART	HIS.REL4PTØ	RATING-BY-DISTRICT mainline

The HIS342Ø4 Source Module - This source module is the RATING-BY-DISTRICT mainline program. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

The HIS342Ø4 Load Module - The RATING-BY-DISTRICT load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS34Ø21	SFRRDQ interface
HIS342Ø4	RATING-BY-DISTRICT mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The DEF-MILES-BY-COUNTY Program

Source Module	Language	Function
HIS342Ø5	PL/I	DEF-MILES-BY-COUNTY mainline

Load Module	Entry Point	Library	Function
HIS342Ø5	PLISTART	HIS.REL4PTØ	DEF-MILES-BY-COUNTY

The HIS342Ø5 Source Module - This source module is the mainline program of DEF-MILES-BY-COUNTY. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDGS,SETINST - PRINT subroutine

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

INCNTY - INCNTY subroutine

The HIS342Ø5 Load Module - This load module is the DEF-MILES-BY-COUNTY load module. It contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21142	INCNTY subroutine
* HIS34Ø21	SFRRDQ interface
HIS342Ø5	DEF-MILES-BY-COUNTY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE-SUFFREP Program

Source Module	Language	Function
HIS346ØØ	PL/I	CREATE-SUFFREP mainline
HIS346Ø1	PL/I	CREATE-SUFFREP SREPSUF
HIS346Ø2	PL/I	CREATE-SUFFREP SREPRLG
HIS346Ø3	PL/I	CREATE-SUFFREP SREPTRF
HIS346Ø4	PL/I	CREATE-SUFFREP SREPACC
HIS346Ø5	PL/I	CREATE-SUFFREP SREPCAL
HIS346Ø6	PL/I	CREATE-SUFFREP SREPLOD
HIS346Ø7	PL/I	CREATE-SUFFREP SREPERR
HIS346Ø8	PL/I	CREATE-SUFFREP SREPIN
HIS346Ø9	PL/I	CREATE-SUFFREP SREPOUT

Load Module	Entry Point	Library	Function
HIS346ØØ	PLISTART	HIS.REL4PTØ	CREATE-SUFFREP

The HIS346ØØ Source Module - This source module is the CREATE-SUFFREP mainline program. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine
SREPSUF - SREPSUF subroutine
SREPRLG - SREPRLG subroutine
SREPTRF - SREPTRF subroutine
SREPACC - SREPACC subroutine
SREPCAL - SREPCAL subroutine
SREPLOD - SREPLOD subroutine
SREPERR - SREPERR subroutine
CLOSIN - SREPIN subroutine
CLOSOUT - SREPOUT subroutine

The HIS346Ø1 Source Module - This source module is the SREPSUF subroutine of CREATE-SUFFREP. It reads the sufficiency file and creates the sufficiency report file, filling in sufficiency data. A label variable is passed, and a branch to the passed label is taken if an error occurs. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
SUFRDQ,SUFRDQI,SUFRDQC - SUFRDQ subroutine
DISTQ,DISTQC - DISTQ subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine

The HIS346Ø2 Source Module - This source module is the SREPRLG subroutine of CREATE-SUFFREP. It reads the sufficiency report file built by SREPSUF and fills in roadlog data. A label variable is passed (see HIS346Ø1 above). The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQT,RLGRDQL,RLGRDQC - RLGRDQ subroutine
SREPIN,OPENIN,CLOSIN - SREPIN subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine
INCNTY - INCNTY subroutine
CVTSURF - CVTSURF subroutine

The HIS346Ø3 Source Module - This source module is the SREPTRF subroutine of CREATE-SUFFREP. It fills traffic data into the report file. The calling sequence is identical to HIS346Ø1 above. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
VEHMILE,VEHMILC - VEHMILE subroutine
SREPIN,OPENIN,CLOSIN - SREPIN subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine

The HIS346Ø4 Source Module - This source module is the SREPACC subroutine of CREATE-SUFFREP. It fills accident data into the report file. The calling sequence is identical to HIS346Ø1 above. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
ACDRDQ,ACDRDQI,ACDRDQC - ACDRDQ subroutine
TRFRDQ,TRFRDQI,TRFRDQC - TRFRDQ subroutine
SREPIN,OPENIN,CLOSIN - SREPIN subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine

The HIS346Ø5 Source Module - This source module is the SREPCAL subroutine of CREATE-SUFFREP. It fills in data items that are calculated from the data stored into the report file by the earlier phases. The calling sequence is identical to HIS346Ø1 above. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
TRRRDQ,TRRRDQF,TRRRDQX,TRRRDQC - TRRRDQ subroutine
GETSUFF - GETSUFF subroutine
GETDAY - GETDAY subroutine
SREPIN,OPENIN,OPENOUT - SREPIN subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine

The HIS346Ø6 Source Module - This source module is the SREPLOD subroutine of CREATE-SUFFREP. It loads the sufficiency report file as built by the previous phases into indexed-sequential format. The calling sequence is identical to HIS346Ø1 above. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
SREPIN,OPENIN,CLOSIN - SREPIN subroutine
SREPOUT,OPENOUT,CLOSOUT - SREPOUT subroutine

The HIS346Ø7 Source Module - This source module is the SREPERR subroutine of CREATE-SUFFREP. It is an error-analysis phase that is given control if an error is detected. No arguments are passed to SREPERR. The source module contains the following external references:

PRINTER,PRINT,PRINTA - PRINT subroutine
SFRWRQ,SFRWRQC - SFRWRQ subroutine
PRNTSFR - PRNTSFR subroutine
CLOSIN - SREPIN subroutine
CLOSOUT - SREPOUT subroutine

The HIS346Ø8 Source Module - This source module is the SREPIN subroutine of CREATE-SUFFREP. It reads input records for the processing phases. Input can be from the indexed-sequential file or from a scratch file built from a preceding phase, depending upon the RESTART parameter specified on the command. It has entry points SREPIN, OPENIN, AND CLOSIN. OPENIN is called to open the file - no arguments are passed. SREPIN is called to read a record - a pointer and the error label are passed. CLOSIN is called to close the file - no arguments are passed. SREPIN contains the following external references:

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

The HIS346Ø9 Source Module - SREPOUT writes records for the processing phases. Output is to a scratch file for all phases except SREPLOD, when output is to the indexed-sequential report file. The subroutine has entry points SREPOUT, OPENOUT, and CLOSOUT. Calling sequences are identical to HIS346Ø8.

The HIS346ØØ Load Module - The CREATE-SUFFREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø42	CVTSURF subroutine
* HIS21Ø52	GETSUFF subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31ØØ1	TRFRDQ interface
* HIS31Ø21	TRRRDQ interface
* HIS311ØØ	VEHMILE subroutine
* HIS32Ø25	DISTQ interface
* HIS33Ø21	ACDRDQ interface
* HIS34ØØ1	SUFRDQ interface
* HIS34Ø21	SFRRDQ interface
HIS34Ø22	SFRWRQ subroutine
* HIS341ØØ	PRNTSFR subroutine
HIS346ØØ	CREATE-SUFFREP mainline
HIS3461	CREATE-SUFFREP SREPSUF
HIS3462	CREATE-SUFFREP SREPRLG
HIS3463	CREATE-SUFFREP SREPTRF
HIS3464	CREATE-SUFFREP SREPACC
HIS3465	CREATE-SUFFREP SREPCAL
HIS3466	CREATE-SUFFREP SREPLOD
HIS3467	CREATE-SUFFREP SREPERR
HIS3468	CREATE-SUFFREP SREPIN
HIS3469	CREATE-SUFFREP SREPOUT

* Stored in HIS.REL4PTØ to allow inclusion by automatic call.

The LIST-SUFFREP Program

Source Module	Language	Function
HIS3462Ø	PL/I	LIST-SUFFREP mainline

Load Module	Entry Point	Library	Function
HIS3462Ø	PLISTART	HIS.REL4PTØ	LIST-SUFFREP

The HIS3462Ø Source Module - This source module is the LIST-SUFFREP mainline program. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST,DUMP - PRINT subroutine

SFRRDQ,SFRRDQI,SFRRDQC - SFRRDQ subroutine

PRNTSFR - PRNTSFR subroutine

The HIS3462Ø Load Module - The LIST-SUFFREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS34Ø21	SFRRDQ interface
* HIS341ØØ	PRNTSFR subroutine
HIS3462Ø	LIST-SUFFREP

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE Program

Source Module	Language	Function
HIS347ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS347Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS347Ø2	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS347Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS3471Ø	PL/I	SKDRDC subroutine
HIS34712	PL/I	SKDEDIT subroutine

Load Module	Entry Point	Library	Function
HIS347ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS347Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS347Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS347Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE

The HIS347ØØ Source Module - This source module is the mainline program of UPDATE,FUNCTION=DELETE. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST - PRINT subroutine
SUFRWB,SUFRWBD,SUFRWBC - SUFRWB subroutine
SUFRDC,SUFRDCD,SUFRDCI - SUFRDC subroutine

The HIS347Ø1 Source Module - This source module is the mainline program of UPDATE,FUNCTION=INSERT. It contains the following external references:

PRINTER,PRINT,SETHDGS,SETINST - PRINT subroutine
SUFINB,SUFINBC - SUFINB subroutine
SUFCVT - SUFCVT subroutine
SUFEDIT - SUFEDIT subroutine
SUFRDC,SUFRDCI - SUFRDC subroutine

The HIS347Ø2 Source Module - This source module is the mainline program of UPDATE,FUNCTION=NEW-KEY. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST - PRINT subroutine
SUFINB,SUFINBN,SUFINBC - SUFINB subroutine
SUFRDC,SUFRDCN,SUFRDCI - SUFRDC subroutine

The HIS347Ø3 Source Module - This source module is the mainline program of UPDATE,FUNCTION=REWRITE. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDGS,SETINST - PRINT subroutine
SUFRDC,SUFRDCI - SUFRDC subroutine
SUFCVT,SUFCVTA - SUFCVT subroutine
REWRITE,REWRITF - REWRITE subroutine
SUFEDIT - SUFEDIT subroutine
SUFRWB,SUFRWBR,SUFRWBC - SUFRWB subroutine

The HIS3471Ø Source Module - This source module is the SUFRDC subroutine. It has entry points SUFRDC, SUFRDCD, SUFRDCN, and SUFRDCI. SUFRDCI is called to open the file - a char(8) ddname is passed. The other entry points are called to read a record - SUFRDCD by delete, SUFRDCN by new-key, and SUFRDC by the other functions. A pointer is passed. SUFRDC contains the following external references: PRINTER,PRINT,PRINTA,DUMP - PRINT subroutine.

The HIS34712 Source Module - This source module is the SUFEDIT subroutine. It is called to perform edit checks on a sufficiency record. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

DATEDIT - DATEDIT subroutine

When called, a pointer which contains an address of a sufficiency record and a binary fixed(15) variable are passed. A return code is passed back in the binary variable:

Ø	No errors or warnings detected
1	One or more warnings but no severe errors detected
2	One or more severe errors detected

The HIS347ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
	HIS34ØØ3	SUFRWB subroutine
	HIS347ØØ	UPDATE,FUNCTION=DELETE mainline
	HIS3471Ø	SUFRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS347Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
	HIS34ØØ2	SUFINB subroutine
	HIS347Ø1	UPDATE,FUNCTION=INSERT mainline
	HIS3471Ø	SUFRDC subroutine
*	HIS34711	SUFCVT subroutine
	HIS34712	SUFEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS347Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
	HIS34ØØ2	SUFINB subroutine
	HIS347Ø2	UPDATE,FUNCTION=NEW-KEY mainline
	HIS3471Ø	SUFRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS347Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS21Ø65	REWRITE subroutine
	HIS34ØØ3	SUFRWB subroutine
	HIS347Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS3471Ø	SUFRDC subroutine
*	HIS34711	SUFCVT subroutine
	HIS34712	SUFEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3472Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3472Ø	COPY	HIS.REL4PTØ	COPY

The HIS3472Ø Source Module - This source module is the mainlinb program of COPY. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3472Ø Load Module - The COPY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
HIS3472Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS34721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS34721	CREATE	HIS.REL4PTØ	CREATE

The HIS34721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS34721 Load Module - The CREATE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø5	PRINTER control section
*	HIS2Ø991	LOAD subroutine
	HIS34721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS34722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS34722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS34722 Source Module - This source module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS34722 Load Module - The REORGANIZE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø5	PRINTER control section
*	HIS2Ø99Ø	BACKUP subroutine
*	HIS2Ø991	LOAD subroutine
	HIS34722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS34731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS34731	PLISTART	HIS.REL4PTØ	LIST

The HIS34731 Source Module - This program is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDGS,SETINST,DUMP - PRINT subroutine

SUFRD,SUFRDF,SUFRDC - SUFRD subroutine

The HIS34731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS34Ø11	SUFRD interface
HIS34731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 8

TRAFFIC SUBSYSTEM

The traffic subsystem is also known as the HIS31 subsystem. The names of the source modules and load modules of the traffic subsystem have names of the format HIS31xxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the traffic subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining the programs. Use of the programs and subroutines is described in the other HIS Release 4.Ø manuals.

The TRFRDQ Subroutine

Source Module	Language	Function
HIS31ØØØ	Assembler	TRFRDQ subroutine
HIS31ØØ1	Assembler	TRFRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS31ØØØ	TRFRDQE	HIS.REL4PTØ	TRFRDQ	TRFRDQ subroutine
TRFRDQ	---	HIS.SUBRTN4	--	TRFRDQ interface

The HIS31ØØØ Source Module - This source module is the TRFRDQ subroutine. It is designed as a dynamic subroutine - one that is loaded into core when needed rather than link-edited with the calling program. The source module is stored only in the HIS31ØØØ load module so that only one link-edit is needed if the source module is altered. The source module contains the following external references:

PRINT,PRINTER,DUMP - PRINT subroutine

The HIS31ØØ1 Source Module - This source module is the TRFRDQ interface. It is link-edited with programs that call TRFRDQ. When called, it loads the TRFRDQ subroutine into core and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS31ØØØ Load Module - This load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS31ØØØ	TRFRDQ subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The TRFRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS31ØØ1 source module.

The TRFINB Subroutine

Source Module	Language	Function
HIS31ØØ2	Assembler	TRFINB subroutine

The HIS31ØØ2 Source Module - This source module is the TRFINB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The TRFRWB Subroutine

Source Module	Language	Function
HIS31ØØ3	Assembler	TRFRWB subroutine

The HIS31ØØ3 Source Module - This source module is the TRFRWB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The TRFRD Subroutine

Source Module	Language	Function
HIS31Ø1Ø	Assembler	TRFRD subroutine
HIS31Ø11	Assembler	TRFRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS31Ø1Ø	TRFRDE	HIS.REL4PTØ	TRFRD	TRFRD subroutine
TRFRD	--	HIS.SUBRTN4	---	TRFRD interface

The HIS31Ø1Ø Source Module - This source module is the TRFRD subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). The source module resides in only one load module so that only one link-edit is necessary if the source module is modified. The source module has the following external references:

PRINTER,PRINT,DUMP,SETINST - PRINT subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

TRFRDQ,TRFRDQF,TRFRDQR,TRFRDQT,TRFRDQC,TRFRDQX - TRFRDQ subroutine

The HIS31Ø11 Source Module - This source module is the TRFRD interface. It is link-edited with programs that call TRFRD. When called, it loads the TRFRD subroutine into core and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS31Ø1Ø Load Module - This load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS22ØØ1	SELTEST interface
* HIS31ØØ1	TRFRDQ interface
HIS31Ø1Ø	TRFRD subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The TRFRD Load Module - This module is stored in the HIS.SUBRTN4 library. When link-editing, it is retrieved by automatic call. It contains the HIS31Ø11 source module.

The TRRRDQ Subroutine

Source Module	Language	Function
HIS31Ø2Ø	Assembler	TRRRDQ subroutine
HIS31Ø21	Assembler	TRRRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS31Ø2Ø	TRRRDQE	HIS.REL4PTØ	TRRRDQ	TRRRDQ subroutine
TRRRDQ	---	HIS.SUBRTN4	--	TRRRDQ interface

The HIS31Ø2Ø Source Module - This source module is the TRRRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). It resides in only one load module. The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS31Ø21 Source Module - This source module is the TRRRDQ interface. It is link-edited with programs that call TRRRDQ. When called, it loads the HIS31Ø2Ø load module into core and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The HIS31Ø2Ø Load Module - This load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS31Ø2Ø	TRRRDQ subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The TRRRDQ Load Module - This module is stored in the HIS.SUBRTN4 library. When link-editing, it is retrieved by automatic call. It contains the HIS31Ø21 source module.

The TRRWRQ Subroutine

Source Module	Language	Function
HIS31Ø22	Assembler	TRRWRQ subroutine

The HIS31Ø22 Source Module - This source module is the TRRWRQ subroutine. The source module contains no external references.

The VEHMILE Subroutine

Source Module	Language	Function
HIS311ØØ	PL/I	VEHMILE subroutine

Load Module	Library	Function
VEHMILE	HIS.SUBRTN4	VEHMILE subroutine

The HIS311ØØ Source Module - This source module is the VEHMILE subroutine. It contains the following external references:

TRFRDQ,TRFRDQI,TRFRDQL,TRFRDQT,TRFRDQX,TRFRDQC - TRFRDQ subroutine
DISTQ,DISTQO,DISTQC - DISTQ subroutine
PRINTER,PRINT,DUMP - PRINT subroutine

The VEHMILE Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of VEHMILE by automatic call. It contains the HIS311ØØ source module.

The ADT Subroutine

Source Module	Language	Function
HIS311Ø1	Assembler	ADT subroutine

Load Module	Library	Function
ADT	HIS.SUBRTN4	ADT subroutine

The HIS311Ø1 Source Module - This source module is the ADT subroutine. It contains the following external references:

PRINT,DUMP - PRINT subroutine

DISTB,DISTBO,DISTBC - DISTB subroutine

TRFRDQ,TRFRDQL,TRFRDQX,TRFRDQF,TRFRDQC - TRFRDQ subroutine

The ADT Load Module - This load module is stored in the HIS.SUBRTN4 library to allow inclusion of the ADT subroutine by automatic call. It contains the HIS311Ø1 source module.

The TRFCVT Subroutine

Source Module	Language	Function
HIS31711	PL/I	TRFCVT subroutine

Load Module	Library	Function
TRFCVT	HIS.SUBRTN4	TRFCVT subroutine

The HIS31711 Source Module - This source module is the TRFCVT subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The TRFCVT Load Module - This load module is stored in the HIS.SUBRTN4 library. It contains the HIS31711 source module.

The TRAFFIC-BY-SECTIONS Program

Source Module	Language	Function
HIS312ØØ	PL/I	TRAFFIC-BY-SECTIONS mainline

Load Module	Entry Point	Library	Function
HIS312ØØ	PLISTART	HIS.REL4PTØ	TRAFFIC-BY-SECTIONS

The HIS312ØØ Source Module - This source module is the mainline program of TRAFFIC-BY-SECTIONS. It contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETHDG,SETINST,SETLINK,DUMP - PRINT subroutine
RLGRDQ,RLGRDQI,RLGRDQX,RLGRDQC - RLGRDQ subroutine
TRRRDQ,TRRRDQI,TRRRDQX,TRRRDQC - TRRRDQ subroutine
INCNTY - INCNTY subroutine

The HIS312ØØ Load Module - The TRAFFIC-BY-SECTIONS load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21142	INCNTY subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31Ø21	TRRRDQ interface
HIS312ØØ	TRAFFIC-BY-SECTIONS mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-ROUTES Program

Source Module	Language	Function
HIS312Ø1	PL/I	SUMMARY-BY-ROUTES mainline

Load Module	Entry Point	Library	Function
HIS312Ø1	PLISTART	HIS.REL4PTØ	SUMMARY-BY-ROUTES

The HIS312Ø1 Source Module - This source module is the mainline program of SUMMARY-BY-ROUTES. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

TRRRDQ,TRRRDQI,TRRRDQC - TRRRDQ subroutine

The HIS312Ø1 Load Module - The SUMMARY-BY-ROUTES load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS31Ø21	TRRRDQ interface
HIS312Ø1	SUMMARY-BY-ROUTES mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUM-BY-COUNTY Program

Source Module	Language	Function
HIS312Ø2	PL/I	SUM-BY-COUNTY mainline

Load Module	Entry Point	Library	Function
HIS312Ø2	PLISTART	HIS.REL4PTØ	SUM-BY-COUNTY

The HIS312Ø2 Source Module - This source module is the mainline program of SUM-BY-COUNTY. It contains the following external references:

PRINTER,PRINT,DUMP,SETHDG - PRINT subroutine

RLGRDQ,RLGRDQI,RLGRDQX,RLGRDQC - RLGRDQ subroutine

TRRRDQ,TRRRDQI,TRRRDQC - TRRRDQ subroutine

The HIS312Ø2 Load Module - The SUM-BY-COUNTY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31Ø21	TRRRDQ interface
HIS312Ø2	SUM-BY-COUNTY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE-TRAFREP Program

Source Module	Language	Function
HIS316ØØ	PL/I	CREATE-TRAFREP mainline

Load Module	Entry Point	Library	Function
HIS316ØØ	PLISTART	HIS.REL4PTØ	CREATE-TRAFREP

The HIS316ØØ Source Module - This source module is the mainline program of CREATE-TRAFREP. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

TRFRDQ,TRFRDQF,TRFRDQR,TRFRDQX,TRFRDQC - TRFRDQ subroutine

POINTQ,POINTQC - POINTQ subroutine

TRRWRQ,TRRWRQC - TRRWRQ subroutine

The HIS316ØØ Load Module - The CREATE-TRAFREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS31ØØ1	TRFRDQ interface
HIS31Ø22	TRRWRQ subroutine
HIS316ØØ	CREATE-TRAFREP mainline
* HIS32Ø21	POINTQ interface

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST-TRAFREP Program

Source Module	Language	Function
HIS316Ø1	PL/I	LIST-TRAFREP mainline

Load Module	Entry Point	Library	Function
HIS316Ø1	PLISTART	HIS.REL4PTØ	LIST-TRAFREP

The HIS316Ø1 Source Module - This source module is the mainline program of LIST-TRAFREP. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine

TRRRDQ,TRRRDQI,TRRRDQX,TRRRDQC - TRRRDQ subroutine

The HIS316Ø1 Load Module - The LIST-TRAFREP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS31Ø21	TRRRDQ interface
HIS316Ø1	LIST-TRAFREP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE Programs

Source Module	Language	Function
HIS317ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS317Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS317Ø2	PL/I	UPDATE,FUNCTION=NEW-KEY mainline
HIS317Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS3171Ø	PL/I	TRFRDC subroutine
HIS31712	PL/I	TRFEDIT subroutine

Load Module	Entry Point	Library	Function
HIS317ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS317Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS317Ø2	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=NEW-KEY
HIS317Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE

The HIS317ØØ Source Module - This source module is the mainline program for the delete function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine

TRFRWB,TRFRWBD,TRFRWBC - TRFRWB subroutine

TRFRDC,TRFRDCD,TRFRDCI - TRFRDC subroutine

The HIS317Ø1 Source Module - This source module is the mainline program for the insert function. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

TRFINB,TRFINBC - TRFINB subroutine

TRFRDC,TRFRDCI - TRFRDC subroutine

TRFCVT - TRFCVT subroutine

TRFEDIT - TRFEDIT subroutine

The HIS317Ø2 Source Module - This source module is the mainline program for the new-key function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine

TRFINB,TRFINBN,TRFINBC - TRFINB subroutine

TRFRDC,TRFRDCI,TRFRDCN - TRFRDC subroutine

The HIS317Ø3 Source Module - This source module is the mainline program of the rewrite function. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine
TRFRDC,TRFRDCI - TRFRDC subroutine
TRFCVTA,TRFCVT - TRFCVT subroutine
REWRITE,REWRITF - REWRITE subroutine
TRFEDIT - TRFEDIT subroutine
TRFRWB,TRFRWBR,TRFRWBC - TRFRWRB subroutine

The HIS3171Ø Source Module - This source module is the TRFRDC subroutine. It reads data cards for the mainline programs. The calling program first calls entry point TRFRDCI passing a char(8) ddname to use when opening the file. To read a card, the calling programs calls either TRFRDCD (delete function), TRFRDCN (new-key function), or TRFRDC (insert and rewrite functions). A pointer is passed when reading. The pointer is set to the address of a data card (delete or new-key) or to the address of a data string (insert and rewrite functions). The format of a data string is provided with the description of the TRFCVT subroutine in the publication Highway Information System Release 4.Ø: Record Formats and Subroutines. The source module has the following external references:

PRINTER,PRINT,PRINTA,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine

The HIS31712 Source Module - This source module is the TRFEDIT subroutine. It performs edit checks on a traffic record. When called, a pointer to a traffic record and a binary fixed(15) return code are passed. Return codes are:

Ø No errors or warnings detected
1 One or more warnings but no severe errors detected
2 One or more severe errors detected

The source module contains the following external references:

PRINTER,PRINT - PRINT subroutine
DATEDIT - DATEDIT subroutine

The HIS317ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
	HIS31ØØ3	TRFRWB subroutine
	HIS317ØØ	UPDATE,FUNCTION=DELETE mainline
	HIS3171Ø	TRFRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS317Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
	HIS31ØØ2	TRFINB subroutine
	HIS317Ø1	UPDATE,FUNCTION=INSERT mainline
	HIS3171Ø	TRFRDC subroutine
*	HIS31711	TRFCVT subroutine
	HIS31712	TRFEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS317Ø2 Load Module - The UPDATE,FUNCTION=NEW-KEY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
	HIS31ØØ2	TRFINB subroutine
	HIS317Ø2	UPDATE,FUNCTION=NEW-KEY mainline
	HIS3171Ø	TRFRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS317Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS21Ø65	REWRITE subroutine
	HIS31ØØ3	TRFRWB subroutine
	HIS317Ø3	UPDATE,FUNCTION=REWRITE mainline
	HIS31719	TRFRDC subroutine
*	HIS31711	TRFCVT subroutine
	HIS31712	TRFEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE-BY-YEAR Program

Source Module	Language	Function
HIS317Ø4	PL/I	UPDATE-BY-YEAR mainline

Load Module	Entry Point	Library	Function
HIS317Ø4	PLISTART	HIS.REL4PTØ	UPDATE-BY-YEAR

The HIS317Ø4 Source Module - This source module is the mainline program of UPDATE-BY-YEAR. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The HIS317Ø4 Load Module - The UPDATE-BY-YEAR load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
HIS317Ø4	UPDATE-BY-YEAR mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3172Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3172Ø	COPY	HIS.REL4PTØ	COPY

The HIS3172Ø Source Module - This source module is the copy mainline. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3172Ø Load Module - The COPY load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2Ø058	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
HIS3172Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS31721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS31721	CREATE	HIS.REL4PTØ	CREATE

The HIS31721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS31721 Load Module - The CREATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø991	LOAD subroutine
HIS31721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS31722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS31722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS31722 Source Module - This source module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS31722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
* HIS2Ø991	LOAD subroutine
HIS31722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The DUMP Program

Source Module	Language	Function
HIS3173Ø	PL/I	DUMP mainline

Load Module	Entry Point	Library	Function
HIS3173Ø	PLISTART	HIS.SUBRTN4	DUMP

The HIS3173Ø Source Module - This source module is the mainline program of DUMP. It contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

TRFCVT,TRFCVTA - TRFCVT subroutine

TRFRD,TRFRDF,TRFRDC - TRFRD subroutine

The HIS3173Ø Load Module - The DUMP load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS31Ø11	TRFRD interface
* HIS31711	TRFCVT subroutine
HIS3173Ø	DUMP mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS31731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS31731	PLISTART	HIS.REL4PTØ	LIST

The HIS31731 Source Module - This source module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,SETPOSA,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine

TRFRD,TRFRDF,TRFRDC - TRFRD subroutine

RLGRDQ,RLGRDQF,RLGRDQX,RLGRDQC - RLGRDQ subroutine

POINTQ,POINTQC - POINTQ subroutine

The HIS31731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS3ØØØ1	RLGRDQ interface
* HIS31Ø11	TRFRD interface
HIS31731	LIST mainline
* HIS32Ø21	POINTQ interface

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The KEY-LIST Program

Source Module	Language	Function
HIS31732	PL/I	KEY-LIST mainline

Load Module	Entry Point	Library	Function
HIS31732	PLISTART	HIS.REL4PTØ	KEY-LIST

The HIS31732 Source Module - This source module is the mainline program of KEY-LIST. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

TRFRDQ,TRFRDQI,TRFRDQC - TRFRDQ subroutine

The HIS31732 Load Module - The KEY-LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS31ØØ1	TRFRDQ interface
HIS31732	KEY-LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 9

TRUE MILEAGE SUBSYSTEM

The true mileage subsystem is also known as the HIS32 subsystem. The names of source modules and load modules in the true mileage subsystem have names of the format HIS32xxx, where xxx is a 3-digit number.

This chapter describes each of the source modules and load modules of the true mileage subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs. Use of the programs and calling sequences to subroutines are documented in the other HIS Release 4.Ø publications.

The TRMRDQ Subroutine

Source Module	Language	Function
HIS32ØØØ	Assembler	TRMRDQ subroutine
HIS32ØØ1	Assembler	TRMRDQ interface

Load Module	Entry Point	Library	Function
TRMRDQ	N/A	HIS.SUBRTN4	TRMRDQ interface

The HIS32ØØØ Source Module - This source module is the TRMRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It resides only in the TRMFILE load module (see the TRMFILE address list below). The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS32ØØ1 Source Module - This source module is the TRMRDQ interface. It is linked with programs that call TRMRDQ. When called, it loads TRMRDQ into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The TRMRDQ Load Module - This load module is stored in the HIS.SUBRTN4 library. When link-editing, this module is retrieved by automatic call. It contains the HIS32ØØ1 source module.

The TRMRDB Subroutine

Source Module	Language	Function
HIS32ØØ2	Assembler	TRMRDB subroutine
HIS32ØØ3	Assembler	TRMRDB interface

Load Module	Entry Point	Library	Function
TRMRDB	N/A	HIS.SUBRTN4	TRMRDB interface

The HIS32ØØ2 Source Module - This source module is the TRMRDB subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It resides only in the TRMFILE load module (see "The TRMFILE Address List" below). The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

The HIS32ØØ3 Source Module - This source module is the TRMRDB interface. It is linked with programs that call TRMRDB. When called, it retrieves the TRMRDB subroutine into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The TRMRDB Load Module - This load module is stored in the HIS.SUBRTN4 library. It allows linking with the TRMRDB interface using automatic call. The load module contains the HIS32ØØ3 source module.

The TRMRDR Subroutine

Source Module	Language	Function
HIS32ØØ4	Assembler	TRMRDR subroutine

The HIS32ØØ4 Source Module - This source module is the TRMRDR subroutine. It contains the following source references:

PRINTER,PRINT - PRINT subroutine

TRMRDQ,TRMRDQI,TRMRDQC - TRMRDQ subroutine

The TRMINB Subroutine

Source Module	Language	Function
HIS32ØØ5	Assembler	TRMINB subroutine

The HIS32ØØ5 Source Module - This source module is the TRMINB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The TRMRWB Subroutine

Source Module	Language	Function
HIS32ØØ6	Assembler	TRMRWB subroutine

The HIS32ØØ6 Source Module - This source module is the TRMRWB subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The TRMRWQ Subroutine

Source Module	Language	Function
HIS32ØØ7	Assembler	TRMRWQ subroutine

The HIS32ØØ7 Source Module - This source module is the TRMRWQ subroutine. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

GETDATE - GETDATE subroutine

The POINTQ Subroutine

Source Module	Language	Function
HIS32Ø2Ø	Assembler	POINTQ subroutine
HIS32Ø21	Assembler	POINTQ interface

Load Module	Library	Function
POINTQ	HIS.SUBRTN4	POINTQ interface

The HIS32Ø2Ø Source Module - This source module is the POINTQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). The source module contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

TRMRDR,TRMRDRC,TRMRTE - TRMRDR subroutine

The HIS32Ø21 Source Module - This module is the POINTQ interface. It is linked with programs that call POINTQ. When called, it loads POINTQ into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The POINTQ Load Module - This load module is stored in the HIS.SUBRTN4 library. It allows inclusion of the POINTQ interface by automatic call. It contains the HIS32Ø21 source module.

The POINTB Subroutine

Source Module	Language	Function
HIS32Ø22	Assembler	POINTB subroutine
HIS32Ø23	Assembler	POINTB interface

Load Module	Library	Function
POINTB	HIS.SUBRTN4	POINTB interface

The HIS32Ø22 Source Module - This source module is the POINTB subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
TRMRDQ,TRMRDQI,TRMRDQP,TRMRDQX,TRMRDQC - TRMRDQ subroutine

The HIS32Ø23 Source Module - This source module is the POINTB interface. It is linked with programs that call POINTB. When called, it loads POINTB into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The POINTB Load Module - This load module is stored in the HIS.SUBRTN4 library. It allows inclusion of POINTB by automatic call. It consists of the HIS23Ø23 source module.

The DISTQ Subroutine

Source Module	Language	Function
HIS23Ø24	Assembler	DISTQ subroutine
HIS23Ø25	Assembler	DISTQ interface

Load Module	Library	Function
DISTQ	HIS.SUBRTN4	DISTQ interface

The HIS23Ø24 Source Module - This source module is the DISTQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
TRMRDR,TRMRDRC,TRMRTE - TRMRDR subroutine

The HIS23Ø25 Source Module - This source module is the DISTQ interface. It is linked with programs that call DISTQ. When called, it loads DISTQ into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The DISTQ Load Module - This load module is stored in the HIS.SUBRTN4 library. It allows inclusion of DISTQ by automatic call. It consists of the HIS23Ø25 source module.

The DISTB Subroutine

Source Module	Language	Function
HIS23Ø26	Assembler	DISTB subroutine
HIS23Ø27	Assembler	DISTB interface

Load Module	Library	Function
DISTB	HIS.SUBRTN4	DISTB interface

The HIS32Ø26 Source Module - This source module is the DISTB subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than linked with the calling program). It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine
TRMRDQ,TRMRDQI,TRMRDQX,TRMRDQC - TRMRDQ subroutine

The HIS32Ø27 Source Module - This source module is the DISTB interface. It is linked with programs that call DISTB. When called, it loads the DISTB subroutine into storage and passes control to it. The source module contains the following external reference:

FETCH - FETCH subroutine

The DISTB Load Module - This load module is stored in the HIS.SUBRTN4 load library. It allows inclusion of DISTB by automatic call. The load module consists of the HIS32Ø27 source module.

The TRMFILE Address List

Source Module	Language	Function
HIS32Ø3Ø	Assembler	TRMFILE address list

Load Module	Entry Point	Library	Access Name	Function
HIS32Ø3Ø	TRMFILE	HIS.REL4PTØ	TRMFILE	True mileage dynamic subroutines

The HIS32Ø3Ø Source Module - This source module is an address list that allows all of the true mileage dynamic subroutines to be stored in a single load module. External references include TRMRDQE, TRMRDBE, POINTQE, POINTBE, DISTQE, and DISTBE.

The HIS32Ø3Ø Load Module - The TRMFILE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø5	PRINTER control section
HIS32ØØØ	TRMRDQ subroutine
HIS32ØØ2	TRMRDB subroutine
HIS32ØØ4	TRMRDR subroutine
HIS32Ø2Ø	POINTQ subroutine
HIS32Ø22	POINTB subroutine
HIS32Ø24	DISTQ subroutine
HIS32Ø26	DISTB subroutine
HIS32Ø3Ø	TRMFILE address list

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The TRMCVT Subroutine

Source Module	Language	Function
HIS32711	PL/I	TRMCVT subroutine

Load Module	Library	Function
TRMCVT	HIS.SUBRTN4	TRMCVT subroutine

The HIS32711 Source Module - This source module is the TRMCVT subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The TRMCVT Load Module - This load module resides in the HIS.SUBRTN4 library to allow inclusion of TRMCVT by automatic call. It consists of the HIS32711 source module.

The UPDATE Program

Source Module	Language	Function
HIS327ØØ	PL/I	UPDATE,FUNCTION=DELETE mainline
HIS327Ø1	PL/I	UPDATE,FUNCTION=INSERT mainline
HIS327Ø3	PL/I	UPDATE,FUNCTION=REWRITE mainline
HIS327Ø4	PL/I	UPDATE,FUNCTION=SEQL-REWRITE mainline
HIS3271Ø	PL/I	TRMRDC subroutine
HIS32712	PL/I	TRMEDIT subroutine

Load Module	Entry Point	Library	Function
HIS327ØØ	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=DELETE
HIS327Ø1	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=INSERT
HIS327Ø3	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=REWRITE
HIS327Ø4	PLISTART	HIS.REL4PTØ	UPDATE,FUNCTION=SEQL-REWRITE

The HIS327ØØ Source Module - This source module is the mainline program of the delete function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine

TRMRWB,TRMRWBD,TRMRWBC - TRMRWB subroutine

TRMRDC,TRMRDCI - TRMRDC subroutine

The HIS327Ø1 Source Module - This source module is the mainline program of the insert function. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

TRMINB,TRMINBC - TRMINB subroutine

TRMRDC,TRMRDCI - TRMRDC subroutine

TRMCVT - TRMCVT subroutine

TRMEDIT - TRMEDIT subroutine

The HIS327Ø3 Source Module - This source module is the mainline program of the rewrite function. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine

TRMRDC,TRMRDCI - TRMRDC subroutine

TRMCVT,TRMCVTA - TRMCVT subroutine
REWRITE,REWRITF - REWRITE subroutine
TRMEDIT - TRMEDIT subroutine
TRMRWB,TRMRWBR,TRMRWBC - TRMRWB subroutine

The HIS327Ø4 Source Module - This module is the mainline program of the SEQL-REWRITE function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine
TRMRDC,TRMRDCI - TRMRDC subroutine
TRMRWQ,TRMRWQF,TRMRWQR,TRMRWQC - TRMRWQ subroutine
DATEDIT - DATEDIT subroutine

The HIS3271Ø Source Module - This module is the TRMRDC subroutine. It reads data cards for the mainline UPDATE programs. It contains entry points TRMRDC and TRMRDCI. TRMRDCI is called to open the card file - a char(8) ddname is passed. TRMRDC is called to read a record - a pointer is passed. Upon return from TRMRDC, the pointer contains the address of a data card. A null pointer is returned at end-of-file. The subroutine contains the following external references:

PRINTER,PRINT,PRINTA,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine

The HIS32712 Source Module - This module is the TRMEDIT subroutine. It checks a true mileage record for data errors. The calling program passes a pointer that contains a record address and a binary fixed(15) return code. The return code is set to one of the following values:

Ø No errors or warnings detected
1 One or more warnings but no severe errors detected
2 One or more severe errors detected

The source module contains the following external references:

PRINTER,PRINT - PRINT subroutine
DATEDIT - DATEDIT subroutine

The HIS327ØØ Load Module - The UPDATE,FUNCTION=DELETE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
	HIS32ØØ6	TRMRWB subroutine
	HIS327ØØ	UPDATE,FUNCTION=DELETE mainline
	HIS3271Ø	TRMRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS327Ø1 Load Module - The UPDATE,FUNCTION=INSERT load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
	HIS32ØØ5	TRMINB subroutine
	HIS327Ø1	UPDATE,FUNCTION=INSERT mainline
	HIS3271Ø	TRMRDC subroutine
*	HIS32711	TRMCVT subroutine
	HIS32712	TRMEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS327Ø3 Load Module - The UPDATE,FUNCTION=REWRITE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine

(continued on next page)

Source Module	Function
* HIS21Ø65	REWRITE subroutine
HIS32ØØ6	TRMRWB subroutine
HIS327Ø3	UPDATE,FUNCTION=REWRITE
HIS3271Ø	TRMRDC subroutine
* HIS32711	TRMCVT subroutine
HIS32712	TRMEDIT subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS327Ø4 Load Module - The UPDATE,FUNCTION=SEQL-REWRITE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
HIS32ØØ7	TRMRWQ subroutine
HIS327Ø4	UPDATE,FUNCTION=SEQL-REWRITE
HIS3271Ø	TRMRDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The COPY Program

Source Module	Language	Function
HIS3272Ø	Assembler	COPY mainline

Load Module	Entry Point	Library	Function
HIS3272Ø	COPY	HIS.REL4PTØ	COPY

The HIS3272Ø Source Module - This module is the mainline program of COPY. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

The HIS3272Ø Load Module - The COPY load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST interface
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø5	PRINTER control section
*	HIS2Ø99Ø	BACKUP subroutine
	HIS3272Ø	COPY mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The CREATE Program

Source Module	Language	Function
HIS32721	Assembler	CREATE mainline

Load Module	Entry Point	Library	Function
HIS32721	CREATE	HIS.REL4PTØ	CREATE

The HIS32721 Source Module - This source module is the mainline program of CREATE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

LOAD - LOAD subroutine

The HIS32721 Load Module - The CREATE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø5	PRINTER control section
*	HIS2Ø991	LOAD subroutine
	HIS32721	CREATE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS32722	Assembler	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS32722	REORG	HIS.REL4PTØ	REORGANIZE

The HIS32722 Source Module - This module is the mainline program of REORGANIZE. It contains the following external references:

PRINTER,PRINT,SETHDGS - PRINT subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

The HIS32722 Load Module - The REORGANIZE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS2Ø99Ø	BACKUP subroutine
* HIS2Ø991	LOAD subroutine
HIS32722	REORGANIZE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The LIST Program

Source Module	Language	Function
HIS32731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS32731	PLISTART	HIS.REL4PTØ	LIST

The HIS32731 Source Module - This module is the mainline program of LIST. It contains the following external references:

PRINTER,PRINT,SETPOSA,SETHDG,SETINST,DUMP - PRINT subroutine

TRMRDQ,TRMRDQI,TRMRDQC - TRMRDQ subroutine

The HIS32731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ58	GETLIST subroutine
* HIS32ØØ1	TRMRDQ interface
HIS32731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The ROADLOG-TRUMILE-EDIT Program

Source Module	Language	Function
HIS3274Ø	PL/I	ROADLOG-TRUMILE-EDIT mainline

Load Module	Entry Point	Library	Function
HIS3274Ø	PLISTART	HIS.REL4PTØ	ROADLOG-TRUMILE-EDIT

The HIS3274Ø Source Module - This source module is the mainline program of ROADLOG-TRUMILE-EDIT. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETHDGS,SETINST - PRINT subroutine

RLGRDQ,RLGRDQI,RLGRDQX,RLGRDQC - RLGRDQ subroutine

POINTQ,POINTQO,POINTQK,POINTQC - POINTQ subroutine

COINKEY - COINKEY subroutine

The HIS32740 Load Module - The ROADLOG-TRUMILE-EDIT load module contains the following source modules:

	Source Module	Function
*	HIS20050	PRINT interface
*	HIS20051	FETCH interface
*	HIS20058	GETLIST subroutine
*	HIS30001	RLGRDQ interface
*	HIS30100	COINKEY subroutine
*	HIS32021	POINTQ interface
	HIS32740	ROADLOG-TRUMILE-EDIT

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

CHAPTER 1Ø

URBAN SIGN INVENTORY SUBSYSTEM

The urban sign inventory subsystem is also known as the HIS38 subsystem. The names of source and load modules have the format HIS38xxx, where xxx is a 3-digit number.

This chapter describes the source modules and load modules of the urban sign inventory subsystem. This information is intended primarily as a guide to the source listings for use by persons maintaining these programs.

The USNRDQ Subroutine

Source Module	Language	Function
HIS38ØØØ	Assembler	USNRDQ subroutine
HIS38ØØ1	Assembler	USNRDQ interface

Load Module	Entry Point	Library	Access Name	Function
HIS38ØØØ	USNRDQE	HIS.REL4PTØ	USNRDQ	USNRDQ subroutine
USNRDQ	---	HIS.SUBRTN4	--	USNRDQ interface

The HIS38ØØØ Source Module - This module is the USNRDQ subroutine. It is designed as a dynamic subroutine (one that is loaded into core when needed rather than link-edited with the calling program). The subroutine resides only in the HIS38ØØØ load module so that only one link-edited it needed when the module is modified. The module contains the following external references:

CHECKDD - CHECKDD subroutine

The HIS38ØØ1 Source Module - This module is the USNRDQ interface. It is link-edited with programs that call USNRDQ. Its function is to retrieve the USNRDQ subroutine into core whenever it is needed. It contains the following external reference:

FETCH - FETCH subroutine

The HIS38ØØØ Load Module - This load module contains the dynamic USNRDQ subroutine. It contains the following source modules:

Source Module	Function
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ58	GETLIST subroutine
HIS38ØØØ	USNRDQ subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The USNRDQ Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of USNRDQ by automatic call when link-editing. It contains the HIS38ØØ1 source module.

The USNRD Subroutine

Source Module	Language	Function
HIS38Ø1Ø	Assembler	USNRD Subroutine
HIS38Ø11	Assembler	USNRD interface

Load Module	Entry Point	Library	Access Name	Function
HIS38Ø1Ø	USNRDE	HIS.REL4PTØ	USNRD	USNRD subroutine
USNRD	--	HIS.SUBRTN4	---	USNRD interface

The HIS38Ø1Ø Source Module - This module is the USNRD subroutine. It is designed as a dynamic subroutine in a similar manner as USNRDQ. The module contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

CVTCITY - CVTCITY subroutine

CALCAGE - CALCAGE subroutine

USNRDQ,USNRDQF,USNRDQX,USNRDQC - USNRDQ subroutine

SELTEST,SELTESTI,SELTESTC - SELTEST subroutine

The HIS38Ø11 Source Module - This module is the USNRD interface. It is link-edited with programs that call USNRD. Its function is to retrieve the USNRD subroutine into core whenever it is needed. It contains the following external reference:

FETCH - FETCH subroutine

The HIS38Ø1Ø Load Module - The dynamic USNRD load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø5	PRINTER control section
* HIS21Ø13	CVTCITY subroutine
* HIS22ØØ1	SELTEST interface
* HIS38ØØ1	USNRDQ interface
HIS38Ø1Ø	USNRD subroutine
* HIS381Ø1	CALCAGE subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The USNRD Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of USNRD by automatic call when link-editing. It contains the HIS38Ø11 source module.

The USNXY Subroutine

Source Module	Language	Function
HIS381ØØ	PL/I	USNXY subroutine

The HIS381ØØ Source Module - This module is the USNXY subroutine. It contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

CVTCITY - CVTCITY subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The CALCAGE Subroutine

Source Module	Language	Function
HIS381Ø1	Assembler	CALCAGE subroutine

Load Module	Library	Function
CALCAGE	HIS.SUBRTN4	CALCAGE subroutine

The HIS381Ø1 Source Module - This module is the CALCAGE subroutine. It contains the following external reference:

GETDATE - GETDATE subroutine

The CALCAGE Load Module - This module is stored in the HIS.SUBRTN4 library to allow inclusion of CALCAGE by automatic call when link-editing. It contains the HIS381Ø1 source module.

The SGNXCHK Subroutine

Source Module	Language	Function
HIS381Ø2	PL/I	SGNXCHK subroutine

The HIS381Ø2 Source Module - This module is the SGNXCHK subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The EDITSGN Subroutine

Source Module	Language	Function
HIS381Ø3	PL/I	EDITSGN subroutine

The HIS381Ø3 Source Module - This module is the EDITSGN subroutine. It contains the following external references:

PRINTER,PRINT - PRINT subroutine

The LIST-SIGNS-BY-STREET Program

Source Module	Language	Function
HIS382ØØ	PL/I	LIST-SIGNS-BY-STREET mainline
HIS382Ø2	PL/I	SIGNS subroutine

Load Module	Entry Point	Library	Function
HIS382ØØ	PLISTART	HIS.REL4PTØ	LIST-SIGNS-BY-STREET

The HIS382ØØ Source Module - This module is the mainline program of LIST-SIGNS-BY-STREET. It checks the command format and reads the request cards if supplied. It then calls SIGNS, which builds a scratch file with the data for listing. It then prints the signs-by-street listing. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETNEW,SETPOS,SETINST,DUMP - PRINT subroutine

CVTCITY - CVTCITY subroutine

DUMPDD - DUMPDD subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

DATE4 - DATE4 subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

SIGNS - SIGNS subroutine

The HIS382Ø2 Source Module - This module is the SIGNS subroutine. It builds and sorts a scratch file which is then printed by the LIST-SIGNS-BY-STREET mainline. It contains the following external references:

PRINTER,PRINT,DUMP - PRINT subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

The HIS382ØØ Load Module - The LIST-SIGNS-BY-STREET load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS38Ø11	USNRD interface
HIS382ØØ	LIST-SIGNS-BY-STREET mainline
HIS382Ø2	SIGNS subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-CONDITION Program

Source Module	Language	Function
HIS382Ø4	PL/I	SUMMARY-BY-CONDITION mainline
HIS382Ø5	PL/I	SUMCNDA subroutine
HIS382Ø6	PL/I	SUMCNDB subroutine
HIS382Ø7	PL/I	SUMCNDC subroutine

Load Module	Entry Point	Library	Function
HIS382Ø4	PLISTART	HIS.REL4PTØ	SUMMARY-BY-CONDITION

The HIS382Ø4 Source Module - This module is the mainline program. It calls the three summary-by-condition subroutines in the proper order. Calling sequences to the three subroutines are identical. Three arguments are passed:

1. PTR-VAL - A pointer to a summary values array.
2. PTR-SUM - A pointer to a summary option array.
3. RC - A binary fixed(15) return code.

Return codes from each subroutine are:

Ø Successful
1 Unsuccessful

The summary value array is allocated within the mainline, and contains a number of fixed(7) variables in which the summary calculations are performed. The summary option array is allocated within the mainline, and contains a number of bit-string variables. This array is used for indicators governing which summaries are calculated and printed.

The mainline module contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

DATE4 - DATE4 subroutine

SUMCNDA,SUMCNDB,SUMCNDC - Summary-by-condition subroutines

The HIS382Ø5 Source Module - This module is the SUMCNDA subroutine. It is an initialization subroutine. It performs the following functions:

1. Check the command for validity and print a list of the selected options.
2. Fill in the summary option array based on the SUMMARIES and DDNAME parameters.
3. Initialize the summary value array to zeroes.

SUMCNDA contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine

DUMPDD - DUMPDD subroutine

CVTCITY - CVTCITY subroutine

The HIS382Ø6 Source Module - This module is the SUMCNDB subroutine. It reads the urban sign inventory file and performs calculations for the summary. It performs all of the necessary calculations including the calculations of totals. SUMCNDB contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

The HIS382Ø7 Source Module - This module is the SUMCNDC subroutine. It prints the requested summaries using the values calculated by SUMCNDB. No calculations other than calculation of percentages are performed in SUMCNDC. SUMCNDC contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA,SETHDG,SETINST - PRINT subroutine

DATE4 - DATE4 subroutine

The HIS382Ø4 Load Module - The SUMMARY-BY-CONDITION load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS38Ø11	USNRD interface
HIS382Ø4	SUMMARY-BY-CONDITION mainline
HIS382Ø5	SUMCNDA subroutine
HIS382Ø6	SUMCNDB subroutine
HIS382Ø7	SUMCNDC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-SIGN-CODE Program

Source Module	Language	Function
HIS382Ø8	PL/I	SUMMARY-BY-SIGN-CODE mainline
HIS382Ø9	PL/I	SUMCODA subroutine
HIS3821Ø	PL/I	SUMCODB subroutine

Load Module	Entry Point	Library	Function
HIS382Ø8	PLISTART	HIS.REL4PTØ	SUMMARY-BY-SIGN-CODE

The HIS382Ø8 Source Module - This module is the mainline program of SUMMARY-BY-SIGN-CODE. It calls the SUMCODA subroutine first and then the SUMCODB subroutine. The calling sequence to each of these subroutines is identical. The following arguments are passed:

1. TOTAL - fixed(7) - for count of number of signs.
2. RC - binary fixed(15) - for return code.

Return codes are:

Ø Successful
1 Unsuccessful

The mainline program contains the following external references:

PRINTER,PRINT,SETHDG,DUMP - PRINT subroutine

DATE4 - DATE4 subroutine

SUMCODA,SUMCODB - Summary-by-sign-code subroutines

The HIS382Ø9 Source Module - This module builds and sorts a scratch file that can be used to produce the summary-by-sign-code. One record is written to this file for each sign selected. The record format of the scratch file is:

Columns	Length	Format	Contents
1-1Ø	1Ø	char(1Ø)	Sign code number
11-12	2	char(2)	Supplemental code
13-14	2	fixed(3)	Horizontal dimension
15-16	2	fixed(3)	Vertical dimension
17	1	fixed(1)	Shape
18-19	2	fixed(2)	Color
2Ø	1	fixed(1)	Face
21	1	fixed(1)	Material
22	1	fixed(1)	Letter type

The file is sorted in order using the entire record as a sort field (using the sort statement ' SORT FIELDS=(1,22,A),FORMAT=CH '). The record can be sorted in character format because the decimal fields contain only positive or zero values. SUMCODA contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

DUMPDD - DUMPDD subroutine

The HIS3821Ø Source Module - This module is the SUMCODB subroutine. It produces the final printed report of SUMMARY-BY-SIGN-CODE. It operates by reading the scratch file built by SUMCODA, counting up records that are identical. Sign descriptions are retrieved from the sign code cross-reference file, which can be read sequentially because the input scratch file is sorted in order by sign code number. SUMCODB contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETNEW,SETINST,SETHDG,DUMP - PRINT subroutine

PDSRD,PDSRDO,PDSRDF,PDSRDC - PDSRD subroutine

DUMPDD - DUMPDD subroutine

DATE4 - DATE4 subroutine

CVTCITY - CVTCITY subroutine

The HIS382Ø8 Load Module - The SUMMARY-BY-SIGN-CODE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS2ØØ56	CHECKDD interface
* HIS2Ø981	PDSRD subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS38Ø11	USNRD interface
HIS382Ø8	SUMMARY-BY-SIGN-CODE mainline
HIS382Ø9	SUMCODA subroutine
HIS3821Ø	SUMCODB subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SUMMARY-BY-DATE Program

Source Module	Language	Function
HIS38211	PL/I	SUMMARY-BY-DATE mainline
HIS38212	PL/I	SUMDATA subroutine
HIS38213	PL/I	SUMDATB subroutine
HIS38214	PL/I	SUMDATC subroutine

Load Module	Entry Point	Library	Function
HIS38211	PLISTART	HIS.REL4PTØ	SUMMARY-BY-DATE

The HIS38211 Source Module - This module is the mainline program. SUMMARY-BY-DATE is structured along the same lines as the SUMMARY-BY-CONDITION program. The comments above for the HIS382Ø4 source module are applicable to HIS38211, including calling sequences to the SUMMARY-BY-DATE subroutines. The HIS38211 source module contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

DATE4 - DATE4 subroutine

SUMDATA,SUMDATB,SUMDATC - Summary-by-date subroutines

The HIS38212 Source Module - This module is the SUMDATA subroutine. For a description of its functions, refer to the HIS382Ø5 source module above. SUMDATA contains the following external references:

PRINTER,PRINT,SETINST - PRINT subroutine

DUMPDD - DUMPDD subroutine

CVTCITY - CVTCITY subroutine

The HIS38213 Source Module - This module is the SUMDATB subroutine. For a description of its functions, refer to the HIS382Ø6 source module above. SUMDATB contains the following external references:

PRINTER,PRINT - PRINT subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

GETDATE - GETDATE subroutine

The HIS38214 Source Module - This module is the SUMDATC subroutine. For a description of its functions, refer to the HIS382Ø7 source module above. SUMDATC contains the following external references:

PRINTER,PRINT,PRINTA,PRINTB,SETPOS,SETPOSA,SETNEW,SETHDG,SETINST - PRINT subroutine

GETDATE - GETDATE subroutine

DATE4 - DATE4 subroutine

The HIS38211 Load Module - The SUMMARY-BY-DATE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS38Ø11	USNRD interface
HIS38211	SUMMARY-BY-DATE mainline
HIS38212	SUMDATA subroutine
HIS38213	SUMDATB subroutine
HIS38214	SUMDATC subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The SIGN-CODE-XREF Program

Source Module	Language	Function
HIS386ØØ	PL/I	SIGN-CODE-XREF mainline

Load Module	Entry Point	Library	Function
HIS386ØØ	PLISTART	HIS.REL4PTØ	SIGN-CODE-XREF

The HIS386ØØ Source Module - This module is the SIGN-CODE-XREF program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETHDG,SETINST,DUMP - PRINT subroutine

DATE4 - DATE4 subroutine

DUMPDD - DUMPDD subroutine

The HIS386ØØ Load Module - The SIGN-CODE-XREF load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
HIS386ØØ	SIGN-CODE-XREF mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The UPDATE Programs

Source Module	Language	Function
HIS387ØØ	PL/I	Delete function mainline
HIS387Ø1	PL/I	Insert function mainline
HIS387Ø2	PL/I	New-key function mainline
HIS387Ø3	PL/I	Rewrite function mainline
HIS387Ø5	PL/I	USNINST subroutine (insert)
HIS3871Ø	PL/I	USNCOPY subroutine
HIS38711	PL/I	USNCVT subroutine
HIS38712	PL/I	USNEDIT subroutine
HIS38714	PL/I	USNEDRD subroutine
HIS38715	PL/I	USNEDIN subroutine
HIS38716	PL/I	USNEDER subroutine

Load Module	Entry Point	Library	Function
HIS387ØØ	PLISTART	HIS.REL4PTØ	Delete function
HIS387Ø1	PLISTART	HIS.REL4PTØ	Insert function
HIS387Ø2	PLISTART	HIS.REL4PTØ	New-key function
HIS387Ø3	PLISTART	HIS.REL4PTØ	Rewrite function

The HIS387ØØ Source Module - This module is the mainline program of the delete function. It contains the following external references:

PRINTER,PRINT,SETINST,SETHDG,DUMP - PRINT subroutine
DATE4 - DATE4 subroutine
CVTCITY - CVTCITY subroutine
CHECKDD - CHECKDD subroutine

The HIS387Ø1 Source Module - This module is the mainline program of the insert function. It performs the scan/edit phase in which the data cards are read and edited (by the USNED1 subroutine), a sort field is added, and the cards are written to a scratch file. The mainline program also performs the card sort. The USNINST subroutine is then called to perform the file updates. The mainline program contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine
DUMPDD - DUMPDD subroutine
CHECKDD - CHECKDD subroutine
CVTCITY - CVTCITY subroutine
USNINST - USNINST subroutine
USNED1,USNED1I,USNED1C - USNED1 subroutine

The HIS387Ø2 Source Module - This module is the mainline program of the new-key function. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST - PRINT subroutine
CVTCITY - CVTCITY subroutine
DUMPDD - DUMPDD subroutine
DATE4 - DATE4 subroutine
CHECKDD - CHECKDD subroutine

The HIS387Ø3 Source Module - This module is the mainline program of the rewrite function. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,DUMP - PRINT subroutine
DATE4 - DATE4 subroutine
CVTCITY - CVTCITY subroutine
DUMPDD - DUMPDD subroutine
CHECKDD - CHECKDD subroutine

The HIS387Ø5 Source Module - This module is the USNINST subroutine. It performs the actual file updates for the insert function using the scratch file that is built and sorted by the mainline program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETHDG,SETINST,SETNEW,DUMP - PRINT subroutine
DATE4 - DATE4 subroutine
USNRDQ,USNRDQF,USNRDQX,USNRDQC - USNRDQ subroutine
USNCVT - USNCVT subroutine
USNCOPY - USNCOPY subroutine
GETDATE - GETDATE subroutine
CVTCITY - CVTCITY subroutine
CHECKDD - CHECKDD subroutine

The HIS3871Ø Source Module - This module is the USNCOPY subroutine. It contains no external references.

The HIS38711 Source Module - This module is the USNCVT subroutine. It contains the following external references:

USNXY - USNXY subroutine

The HIS38712 Source Module - This module is the USNEDIT subroutine. It contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine
USNEDRD - USNEDRD subroutine

(continued on next page)

USNEDIN - USNEDIN subroutine

USNEDER - USNEDER subroutine

DATEDIT - DATEDIT subroutine

GETDATE - GETDATE subroutine

The HIS38714 Source Module - This module is the USNEDRD subroutine. It reads the city's edit table into a core structure. It contains the following external references:

PDSRD,PDSRDO,PDSRDF,PDSRDC - PDSRD subroutine

PRINTER,PRINT,PRINTA,SETPOS,SETINST,DUMP - PRINT subroutine

CVTCITY - CVTCITY subroutine

The HIS38715 Source Module - This module is the USNEDIN subroutine. It interprets the city's edit table, constructing a core structure that is easily used by the edit routines. It contains the following external references:

PRINTER,PRINT,SETPOS,SETINST,DUMP - PRINT subroutine

The HIS38716 Source Module - This module is the USNEDER subroutine. It builds an array of codes indicating the levels of the various messages (severe, warning, or disabled). It contains the following external references:

CHECKDD - CHECKDD subroutine

PRINTER,PRINT,PRINTA,SETPOS,SETNEW - PRINT subroutine

The HIS387ØØ Load Module - The delete function load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ58	GETLIST subroutine

(continued on next page)

Source Module	Function
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS21Ø13	CVTCITY subroutine
HIS387ØØ	Delete mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS387Ø1 Load Module - The insert function load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ56	CHECKDD interface
* HIS2ØØ57	DUMPDD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø3	DATEDIT subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS2Ø981	PDSRD subroutine
* HIS21Ø13	CVTCITY subroutine
* HIS38ØØ1	USNRDQ interface
HIS381ØØ	USNXY subroutine
HIS387Ø1	Insert mainline
HIS387Ø5	USNINST subroutine
HIS3871Ø	USNCOPY subroutine
HIS38711	USNCVT subroutine
HIS38712	USNEDIT subroutine
HIS38714	USNEDRD subroutine
HIS38715	USNEDIN subroutine
HIS38716	USNEDER subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS387Ø2 Load Module - The new-key function load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ56	CHECKDD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS21Ø13	CVTCITY subroutine
	HIS387Ø2	New-key mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The HIS387Ø3 Load Module - The rewrite function load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	FETCH interface
*	HIS2ØØ56	CHECKDD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø3	DATEDIT subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS2Ø981	PDSRD subroutine
*	HIS21Ø13	CVTCITY subroutine
	HIS381ØØ	USNXY subroutine
	HIS387Ø3	Rewrite mainline
	HIS38712	USNEDIT subroutine
	HIS38714	USNEDRD subroutine
	HIS38715	USNEDIN subroutine
	HIS38716	USNEDER subroutine

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The PURGE Program

Source Module	Language	Function
HIS387Ø4	PL/I	PURGE mainline

Load Module	Entry Point	Library	Function
HIS387Ø4	PLISTART	HIS.REL4PTØ	PURGE

The HIS387Ø4 Source Module - This module is the PURGE program. It contains the following external references:

SETINST - PRINT subroutine

CVTCITY - CVTCITY subroutine

The HIS387Ø4 Load Module - The PURGE load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS21Ø13	CVTCITY subroutine
HIS387Ø4	PURGE mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The REORGANIZE Program

Source Module	Language	Function
HIS38722	PL/I	REORGANIZE mainline

Load Module	Entry Point	Library	Function
HIS38722	PLISTART	HIS.REL4PTØ	REORGANIZE

The HIS38722 Source Module - This module is the REORGANIZE program. It contains the following external references:

PRINTER,PRINT,SETHDG,SETINST,DUMP - PRINT subroutine

DATE4 - DATE4 subroutine

BACKUP - BACKUP subroutine

LOAD - LOAD subroutine

CVTCITY - CVTCITY subroutine

CHECKDD - CHECKDD subroutine

The HIS38722 Load Module - The REORGANIZE load module contains the following source modules:

	Source Module	Function
*	HIS2ØØ5Ø	PRINT interface
*	HIS2ØØ53	TABLRD interface
*	HIS2ØØ56	CHECKDD interface
*	HIS2ØØ57	DUMPDD interface
*	HIS2ØØ58	GETLIST subroutine
*	HIS2Ø9Ø2	GETDATE subroutine
*	HIS2Ø9Ø7	DATE2 subroutine
*	HIS2Ø9Ø9	DATE4 subroutine
*	HIS2Ø99Ø	BACKUP subroutine
*	HIS2Ø991	LOAD subroutine
*	HIS21Ø13	CVTCITY subroutine
	HIS38722	REORGANIZE mainline

The LIST Program

Source Module	Language	Function
HIS38731	PL/I	LIST mainline

Load Module	Entry Point	Library	Function
HIS38731	PLISTART	HIS.REL4PTØ	LIST

The HIS38731 Source Module - This module is the list program. It contains the following external references:

PRINTER,PRINT,PRINTA,SETPOS,SETPOSA,SETNEW,SETHDG,SETINST,DUMP - PRINT subroutine

USNRD,USNRDF,USNRDC - USNRD subroutine

DATE1 - DATE1 subroutine

DATE4 - DATE4 subroutine

TABLRD,TABLRDI,TABLRDC - TABLRD subroutine

The HIS38731 Load Module - The LIST load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ51	FETCH interface
* HIS2ØØ53	TABLRD interface
* HIS2ØØ58	GETLIST subroutine
* HIS2Ø9Ø2	GETDATE subroutine
* HIS2Ø9Ø6	DATE1 subroutine
* HIS2Ø9Ø7	DATE2 subroutine
* HIS2Ø9Ø9	DATE4 subroutine
* HIS38Ø11	USNRD interface
HIS38731	LIST mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.

The GREAT-FALLS-LOAD Program

Source Module	Language	Function
HIS3879Ø	PL/I	GREAT-FALLS-LOAD mainline

Load Module	Entry Point	Library	Function
HIS3879Ø	PLISTART	HIS.REL4pTØ	GREAT-FALLS-LOAD

The HIS3879Ø Source Module - This module is the GREAT-FALLS-LOAD program. It contains the following external references:

PRINTER,PRINT,SETINST,DUMP - PRINT subroutine

The HIS3879Ø Load Module - The GREAT-FALLS-LOAD load module contains the following source modules:

Source Module	Function
* HIS2ØØ5Ø	PRINT interface
* HIS2ØØ58	GETLIST subroutine
HIS3879Ø	GREAT-FALLS-LOAD mainline

* Stored in HIS.SUBRTN4 to allow inclusion by automatic call.